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The London Medical Record

A MONTHLY REVIEW OF THE

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TREATMENT OF NEURALGIA—Letter from Mr. **METCALF JOHNSON.**

[*To the Editor of* '*THE MEDICAL TIMES AND GAZETTE*'.]

'Sir,—May I ask you to lay before your readers the following results of my experience in the treatment of Neuralgia, which is to my mind so likely to afford relief to suffering humanity that I do not feel justified in witholding it? The treatment consists in painting the part affected with Anodyne Amyl Colloid, prepared by Messrs. Ferris & Co., Druggists, of Bristol, and in the exhibition of a remedy composed of the Tincture of Gelseminum and Tincture of Guarana. The followiog cases of relief will be my justification for offering advice to use a prescription of a somewhat secret nature:—

'J. B. called one morning, suffering from facial neuralgia in all the four points of the surface development of the facial nerves. I painted his face over the four spots, and before the liquid was dry bis pain was gone. It returned the next day, but was again relieved by the remedy, the relief lasting for twenty-four hours.

'I met A. B. in the street, who was complaining of an obstinate Neuralgia, whicb bad resisted several of the usual remedies. A trial of the treatment here indicated was attended with immediate relief.

'It has been tried, I believe, at my suggestion, by one member at least of a family of three of my professional brethren.

'A patient suffering from podagric Neuralgia of the forearm finds such relief that frequent resort is bad at night to the use of the painting with the Anodyne Colloid.

'A few days since, a lady suffering from that painful affection called "soft teeth", caused by caries, and in whose case considerable swelling was apparent, found immediate and permanent relief by painting the cheek with the remedy.

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'Hoping this will induce more of your readers to try the remedies suggested, I leave the case in your hands, merely adding that the Anodyne Amyl Colloid professes to be a solution of Aconitine and Veratrine, with Hydride of Amyl in a medium of Collodion; but the proportions are not stated. The Tinctures of Gelseminum and Guarana are in all probability better known to your readers. I have, at the request of Messrs. Ferris & Co., already given them my testimony to the value of their preparation, in a letter addressed to them a few weeks ago. If you will kindly insert these few remarks in your paper, I think you will oblige many of your subscribers, as you will also,

'Lancaster, *May* 1878.' 'Yours, etc., METCALF JOHNSON.'

[*From* '*THE MEDICAL RECORD*', *London, May* 15, 1880.]

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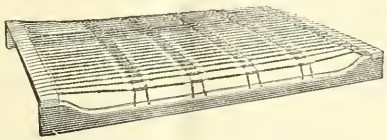

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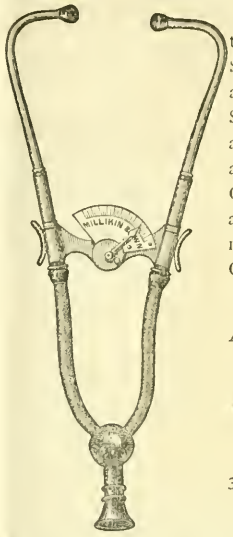

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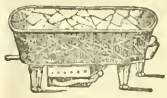

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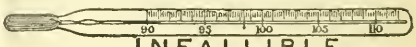

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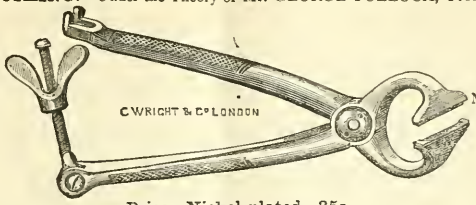

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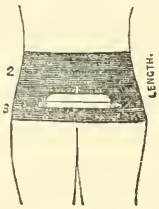

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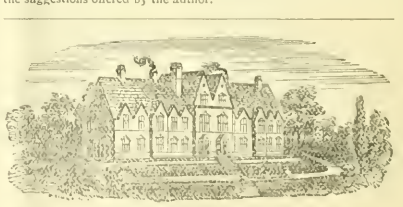

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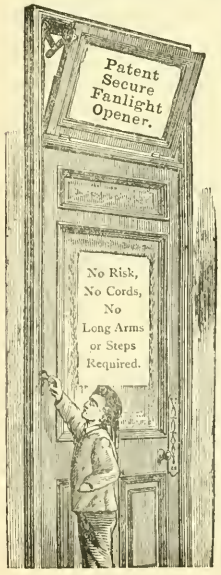

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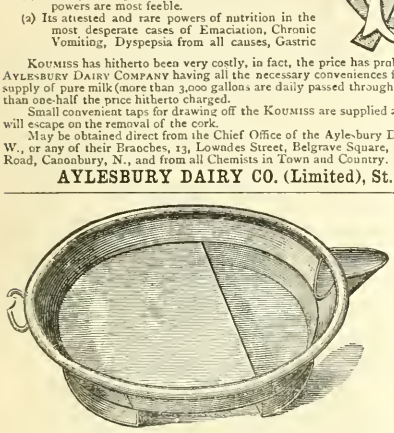

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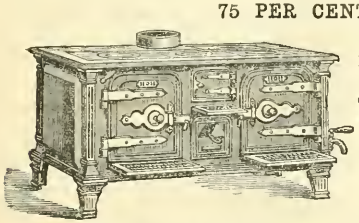

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EXTRACTS FROM RECENT HOSPITAL REPORTS.

Charing Cross Hospital, W.C.: *July 9th*, 1880.

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(Signed) ALEXANDER SILVER, M.A., M.D.,
Physician, &c., to Charing Cross Hospital.

German Hospital, Dalston: *July 28th*, 1880.

I have been instructed by the Committee of our Hospital to acknowledge the receipt of your letter, addressed to them respecting the result of the use of the Apollinaris water, with which your Company has been kind enough to supply our Hospital now already for some time.

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THE HUGHES INDUCTION-BALANCE AND THE LOCALISATION OF BULLETS.

THE localisation of bullets by electricity, one of the most interesting and important applications of electricity that has ever been made, involving as it does the saving of human life and the amelioration of human suffering, has recently been employed with complete success for the localisation of the bullet which so nearly deprived the Republic of the United States of America of its President. On the 16th of July last the following telegram, addressed to Mr. W. H. Preece, was transmitted across the Atlantic by Professor Graham Bell. 'Bell to Preece—Can Hughes suggest form of induction-balance to locate ball in President Garfield? In reply to this telegram, which was handed to Prof. D. E. Hughes, F.R.S., an answer was telegraphed back the same day, in which Professor Hughes gave instructions for the construction of an instrument, a special form of his induction-balance, which has been described in *Engineering;* and Professor Hughes also the same day sent by post to Professor Bell sketches, and a more detailed description of the way to proceed. Professor Hughes' instructions were immediately carried out in Washington, and telegrams which have reached this country inform us that the position of the ball within President Garfield's body has been localised with great accuracy by the electrical method devised by Professor Hughes. The method was as simple as it could be; an induction-balance was constructed, in which one pair of coils, were fixed at a definite and unvariable distance apart by being wound on a double bobbin or spool, being separated from one another by the thickness of the middle flange, and the four free ends of the two coils were made into a cable by which the two coils or searching apparatus were connected to the battery, telephone, and rheophone, and with a second pair of coils which formed the indicating apparatus. From the construction of the induction-balance it follows that by varying the distance of the adjustable coils of the indicating apparatus, until the induction currents in the apparatus are balanced or neutralised, silence in the telephone is produced as long as there is no outside disturbing metallic body within the range of induction of the searching instrument. The moment such is the case the compensation is destroyed, and the sound is brought back in the telephone, becoming louder or less audible as the disturbing body is nearer or further from the pair of searching coils. By passing such an apparatus over that region of the President's body in which the bullet is known to be, an ear placed at the telephone at the other end can immediately detect the sounds becoming louder when the foreign body is exercising its maximum inductive effect upon the balance; and as it is a fact that for equal distances the maximum disturbance is produced when the metallic body lies in the axis of the coils, it will be seen at once that not only the distance of the bullet from the surface of the body, but also its direction from any one spot, can be ascertained with extreme accuracy, and, by repeating the operation on different parts of the region under examination, a number of distances from the surface are obtained as well as a number of lines of direction, all of which have a common origin in the bullet. By this simple arrangement the surgeons attendant on the President of the United States have been able to localise the bullet within his body with unerring exactness.

VON LANGENBECK ON GUMMATA.

THE following is an abstract of a paper read by Professor von Langenbeck at the last Congress of the German Surgical Society, and published in the *Arch. für Klin. Chir.*, Band xxvi. Gummy tumours are so readily and surely amenable to a strictly medicinal treatment, that they might seem to be without the range of surgery. Their growth and maintenance are dependent on a specific infection; and they are to be considered rather as products of specific inflammation than as tumours in the strict sense of the word. These growths, however, demand careful study on the part of surgeons, as they are liable to be confounded with other tumours, and so may be wrongly thought to indicate some surgical interference, and probably some extensive and dangerous operation. This mistake is more likely to occur, since there is often a complete gap in the course of syphilis between the primary infection and the development of the so-called tertiary forms; and the syphilitic disease, after having been latent for many years in an apparently sound subject, may suddenly give rise to a gummy tumour. Another frequent cause of error is great difficulty in making out any previous history of syphilis, in consequence of ignorance or forgetfulness on the part of the patient. In cases of probable syphilitic lesions, the author has long been in the habit of paying but little attention, as a rule, to a patient's statement that syphilitic infection has never occurred. When several gummy growths do exist on the same subject, as is not unfrequently the case in gummatous affections of lymph-glands, tendons, and bones, and when distinct traces of previous syphilitic lesions can be made out, an error in diagnosis is not likely to be made. But, on the other hand, when in a relatively healthy subject there is but one swelling, and all other indications of specific infection are wanting, that surgeon is to be excused who may have resorted to the use of the knife, and have failed to make out the true nature of the growth until, unfortunately, it was too late. For the purpose of showing the importance of finding some means of recognising gummata with precision, a case is reported in which very serious results followed the excision of such a growth in the leg. Unfortunately, these swellings have no constant characteristic marks, and it is often very difficult to establish a certain diagnosis by both objective and subjective phenomena.

There are two typical forms of gummata. The swelling may exist either as a more or less diffused gummatous infiltration, or as a circumscribed and sharply defined gummatous tumour. In the diffused form it occurs most frequently near tendons, and especially about the tendo Achillis, and just above the olecranon and around the tendon of the triceps. In this condition, the gummy swelling resembles limited phlegmonous inflammation, with but slight tendency to extension and suppuration. Sooner or later the skin is perforated and an ulcer found with a light grey base, and secreting a thick viscid discharge, which ulcer, when it has healed, is replaced by a radiated and depressed cicatrix. The gummy

swelling, when circumscribed and in the form of a tumour, is intimately connected with the deeper structures, and does not move freely under the skin. This kind of growth is more or less painful, and often very tender. According to Dr. von Langenbeck's experience, this gummy tumour never remains indolent. As a rule, its growth is not regularly progressive. After having remained of the same size for a long period, it will suddenly increase and become inflamed without any evident cause. The original character of the growth is then lost, an apparent tumour having been converted into what seems to be an ill-defined mass of inflammatory infiltration. The size of a gummy swelling depends, not on the growth of a single deposit, but on the development and agglomeration of several small deposits, bound together by indurated connective tissue. This arrangement is best seen in specimens of cerebral gummy tumour, and of the so-called syphilitic sarcocele. The tumour thus formed is firm and elastic, and presents on section an opaque yellow and dry surface, marked by interlacing fibrous lines. The growths with which it is most liable to be confounded are carcinoma and fibroma. Specific medicinal treatment (iodide of potassium, mercurial inunction) causes speedy disappearance of a gummy tumour, and so, in doubtful cases, assists in the diagnosis. This medicinal treatment should not be continued for long if the swelling do not diminish in size and become less painful; since, in cases of cancer, especially of cancer of the tongue, it may cause degeneration of the growth and other bad consequences.

Gummy growths on muscles usually attain a considerably size, and are likely to be confounded with some form of proper tumour affecting muscular structures. They occur most frequently in large superficial muscle, and near the junction of the muscular and tendinous fibres. When affecting the tongue, they are very often brought under the surgeon's notice, and usually at an early stage, in consequence of the common dread of lingual cancer. There can be very little difficulty in the diagnosis of gummatous disease of the tongue, even in the absence of any history of syphilitic infection, provided the swelling be diffused and the oral mucous membrane also affected. The swelling is always confined, and never extends to the floor of the mouth. When the lingual gummy growth is small and deeply seated, and the mucous membrane of the tongue is sound, the diagnosis becomes one of great difficulty. In such cases, the author states, it is often impossible to make at once a positive diagnosis, and to decide whether the growth be a syphilitic or a cancerous deposit. A broken down gummy tumour in the tongue may be confounded with an abscess, but the true nature of the affection will usually be indicated by the discharge, which in the former condition consists in a thick viscid fluid presenting no microscopical characters of true pus. The chief difficulty in the diagnosis of syphiloma from carcinoma of the tongue is the fact of the frequent relation and association of these two affections. Lingual carcinoma, the author asserts, is much more frequent in males than in females, and in the majority of such cases a history of syphilitic infection can be made out. Cases are recorded to prove that long-continued and neglected gummatous disease of the tongue may pass into well-marked cancer.

Gummatous inflammation occasionally affects arteries, and its traces have been observed both in large trunks and branches, and in minute divisions. It may occur in the aorta, and probably has often led to the formation of aneurism. Von Langenbeck has been able to make out a syphilitic history in about half the cases of aortic aneurism that have come under his observation. The venous system, it is stated, is vary rarely affected by a similar syphilitic lesion. One case has been recorded by Dr. Greenhow, and Dr. von Langenbeck gives the details of a case in which a large gummy swelling of the neck involved the jugular vein. W. JOHNSON SMITH.

HÉRARD ON THE FAVOURABLE INFLUENCE OF HYDRO-PNEUMOTHORAX UPON THE PROGRESS OF PULMONARY TUBERCULISATION.

THIS paper (read at the meeting of the French Association for the Advancement of Science at Algiers by Dr. Hérard, Physician of the Hôtel-Dieu) was intended to show that, whereas ordinarily the occurrence of hydro-pneumothorax in the course of phthisis forms a serious and often fatal complication, in a certain number of cases, more frequently than is supposed, it exercises a favourable influence on the progress of the malady, may arrest its progress, and become an unhoped for means of safety to the patient. Dr. Hérard had collected a certain number of observations, which established in the clearest and most positive manner this salutary influence of hydro-pneumothorax. An illustrative case was that of a youth, a mechanic, aged 17, who was admitted into the Hôtel-Dieu on July 15th, 1880. His mother died of chest-disease, and his father from tuberculosis. He had been delicate from childhood, and had suppuration of the right ear since 3 or 4 years of age. Since a sudden chill in May he had had a constant cough, with expectoration, which became muco-purulent. Loss of strength and appetite, sweating, and profuse diarrhœa followed. These symptoms, together with great emaciation and hectic fever, were present on his admission.

Auscultation showed the existence of blowing respiration and subcrepitant *râles* at the right apex. Over the left apex there were cavernous breath-sound and gurgling, especially marked behind. There was dulness on percussion over the left apex, and some loss of resonance over the right. The vesicular murmur over the rest of both lungs was nearly normal. On August 10, on making a hasty movement, he was suddenly seized with an acute pain in the left side, and with intense dyspnœa; his face was pale and anxious. Tympanitic resonance was found all over the left side, except for about four or five finger-breadths at the base, where there was marked dulness. Amphoric voice and breath-sounds with metallic tinkling were heard on auscultation, the thoracic vibrations were abolished, and succussion could be easily felt, even by the patient himself.

For some days, the patient was alarmingly worse; the lower limbs became œdematous, and the evacuations were involuntary: he was thought to be on the point of death; but, after a struggle of several weeks, about the end of September, a favourable change took place, and from that moment he continued to mend daily. The dyspnœa diminished, strength, appetite, and sleep returned. The cough diminished; and the expectoration, before so abundant, almost completely disappeared. The physical signs at that time were dulness, and resistance to the finger at the left base behind, exaggerated resonance in the other

parts of the chest; the amphoric breath-sound and the metallic tinkling had disappeared, but succussion was still perceptible; the cavernous blowing and the subcrepitant *râles* had notably diminished. The heart remained displaced to the right. At the end of November, he was able to return to his home in the country. Had he been able to pass the winter in a favourable climate, Dr. Hérard believes he might have been completely restored to health. Such cases as these are not rare or isolated ones; twenty such are collected in the thesis of Dr. Toussaint, from different authors.

How shall we explain the favourable influence of hydro-pneumothorax in these instances, and what is the mechanism by which a cure is effected? Is it possible to foresee in what cases such an issue may be hoped for, and in what cases a fatal event may be anticipated? Bearing in mind the anatomico-pathological conditions under which hydro-pneumothorax may occur, we may arrange the cases under three categories, founded on the state of the tuberculous lung.

In the first category, the lesions of the lung are in their earliest stage. The lung presents scattered granulations or small caseous nodules, in the midst of a tissue more or less hyperæmic, but in a condition in which any sudden compression might reduce it to a small volume. The occurrence of hydrothorax in such cases is not rare. All that is necessary in order to establish a communication between the bronchi and the serous cavity, is the softening of one of these small tuberculous masses on the surface of the lung. The first effect of such an accident is the compression and flattening of the lung by the escaped air and the liquid effusion which rapidly follows. Later on, false membranes envelope the organ in a sort of thick resistent shell, and maintain it reduced often to quite an insignificant volume against the vertebral column and groove. The lung, under these circumstances, is dense and carnified, and its functional activity is greatly diminished or completely suppressed; we can readily understand how, in such a case, the tuberculous evolution is checked, or sometimes altogether arrested.

In the second category, the pulmonary lesions are much more advanced, and the phthisis has reached the second or third stage only, and this is the important point; these changes are limited to the upper lobe, the other lobes presenting merely granulations or small caseous masses, surrounded by more or less congested lung-tissue. As in the first category, the effect of hydro-pneumothorax, by compressing the lung, is to arrest its functions, and in diminishing the afflux of blood, to prevent the nutrition of the morbid products, and to stop, in short, the tuberculous process. At the same time another remarkable phenomenon takes place in the upper lobe; the walls of the cavities, yielding to compression, come together, become agglutinated, and sometimes even cicatrise; the pulmonary suppurations and excessive bronchial secretion diminish, and, as in the case cited, the expectoration is completely suppressed. This suppurative process being arrested, the consequent hectic fever, sweating, diarrhœa, etc., disappear also, and the patient passes from the most alarming state into one of sensible amelioration, and even of real cure. But to ensure so favourable a result, it is necessary that the opposite lung should be and remain free from disease.

One of the cases cited by Dr. Toussaint gives anatomical demonstration of the cicatrisation of cavities under such conditions. A young soldier presented all the signs of pulmonary tuberculosis in the third stage, gurgling, loud cavernous blowing, metallic bruits at the left apex, and a few subcrepitant *râles* at the right apex; abundant purulent expectoration, great emaciation, profuse sweatings, hectic fever, intractable dyspepsia. A few days after admission into hospital, a sudden access of suffocation, with pain in the left side, drew attention to the occurrence of hydro-pneumothorax. For some days the patient seemed on the point of death, when slowly and unexpectedly he began to revive; the dyspnœa abated, the fever disappeared, and the appetite became good. The sweatings ceased, and the expectorations changed completely in character, and became scanty and glairy. This amelioration was maintained and augmented until some months afterwards, when an exudation into the right pleural cavity gradually increased, in spite of all that could be done, and the patient died. The necropsy shewed the existence of double pleural effusion. The left lung was flattened and compressed upwards and backwards, and strongly bound down, so that it did not reach below the fourth rib; at its apex there were traces of a large cavity, the walls of which were in contact and had become agglutinated and cicatrised; it was represented by a grey, irregular band, about the size of the little finger. Two smaller bands indicated the existence of two other smaller cavities. These were surrounded by masses of hard cretaceous tubercle. The right lung presented at its apex a few small masses of hard tubercle. These observations show the important part which the compressibility of the pulmonary tissue takes in the cure of such cases.

In the third category, we find the whole of the lung invaded by tuberculous lesions (granulations and broncho-pneumonia); the organ is hard, compact, resistant, irreducible by compression; in such cases, hydro-pneumothorax can only increase the peril which already exists.

It is incorrect, then, to regard the occurrence of hydro-pneumothorax in the course of phthsis as always fatal; on the contrary, in certain well characterised cases, it may be of favourable import.

I. Burney Yeo, M.D.

BIRD ON TREATMENT OF INTRA-THORACIC SUPPURATING HYDATID BY INCISION AND EXTRACTION OF THE CYST.

Dr. L. D. Bird of Victoria communicated two cases to the Medical Society of Victoria of intrathoracic hydatid cysts, which had advanced to the stage of death and decomposition, and were got rid of by incision between the ribs. Dr. Bird pointed out that this was a more complete and radical cure than tapping, or injections, or electricity, as we could never be quite sure, with the latter processes, that the vitality of the cyst had been completely destroyed, and its refilling, therefore, rendered impossible. But extraction was a far more serious and difficult operation, and only justifiable under certain conditions. The first of these was that the hydatid should be in the pleural sac, for then the cyst always enlarged with great rapidity, and, even when emptied of its contents, or dealt with in any way short of removal, remained a permanent source of irritation to the serous surface, giving rise to pleuritic pains, with fever and even inflammatory effusion. The question, of course, had to be faced of the possibility of

diagnosis between a pleural hydatid from one in the lower lobe of the lung, or on the convex surface of the liver, especially in the right side. Usually, in pleural hydatid, the rounded area of dulness is altered somewhat by change of position, which would not happen were the cyst embedded in lung substances.

Other conditions were the existence of large, old suppurating cysts of the lung, which had found their way into a bronchus, and led to the expectoration of fragments of cyst and fœtid pus, with much difficulty and distress to the patient. Such cases usually occurred in the lower lobe, adhesions were almost constantly found, and operation was comparatively safe and easy. He had seen more than a dozen such cases which had resulted in complete success. The following cases, one of pleural and the other of pulmonary hydatid, treated in this way, had not hitherto been published.

A married lady, aged 26, suffered from a condition variously diagnosed as pleuritic effusion, liver enlargement, and abscess. The right side measured an inch and a half more than the left; there was no history of acute pleuritis; pains, however, of a stitchy pleuritic character were felt all over the side. A rounded area of dulness, characteristic of hydatid, was found in the lower part of the right chest. Breath sounds and percussion note were normal at the apex, even when the hips were raised above the level of the thorax. A trocar was introduced in the seventh interspace, and three pints of semi-purulent fluid escaped, containing abundant hooklets on microscopic examination. This did not give much relief, and some ill-defined dulness was left about the base of the right lung, with pleuritic stitches, a quick pulse and high temperature, showing a local source of irritation in the pleura. Dr. Bird was now convinced that it was a case of pleural hydatid, and determined, in conjunction with Dr. Martin, to remove it. The tenth day after the first tapping, a free incision was made between the seventh and eighth ribs, and a large semi-decomposed hydatid cyst, broken into several fragments, was removed without difficulty. A few ounces of pus and broken down fragments of hydatid followed the main cyst, and then rather a free discharge of venous blood, which soon ceased. A piece of drainage-tube was left in the pleura. Great relief followed this operation, fever and pain disappeared, and there were no physical signs of any further foreign body in the cavity of the chest. But a fortnight after the patient began to complain again of dyspnœa and oppression, and, on exploring the cavity of the pleura with an elastic catheter, another cyst was burst into, which discharged about ten ounces of perfectly clear hydatid fluid, swarming with echinococci. This cyst, also, was removed, and the pleural cavity irrigated with weak solutions of iodine. Great relief followed, but, unhappily, symptoms indicative of hydatid in the pericardium ensued, viz., sudden and alarming attacks of dyspnœa, ending in syncope, with cardiac murmurs terribly jumbled and confused. These increased in intensity, till, in one of them, she died suddenly, the pleura and lung being apparently restored to their normal condition. There was, unfortunately, no *post mortem* examination.

The other case was one of hydatid of the lung substance. A girl, aged 9 years, suffered from excessive emaciation, with intense hectic and quick pulse, constant violent cough, and expectoration of pus and fragments of cysts of horrible fœtor. She could only breathe lying over partially prone on the affected side. A large trocar was introduced between the fifth and sixth ribs, and many ounces of fœtid pus and fragments of cyst escaped, and great relief followed. After two days the opening was enlarged, and the parent cyst was removed; a piece of drainage-tube was left in the nidus of the parasite, and this was often washed out with weak Condy's fluid. In less than a month the child returned to her home in perfect health, the wound having healed up from the bottom.

Dr. Bird, in answer to objections, said that even when diagnosis of site can be made with certainty, it must be remembered that simple tapping leaves the cyst intact, and, as this shifted from side to side with every movement, the cavity must refill or pleuritic irritation be set up. Suppuration was sure to take place, and then, with empyæma, plus a cyst, the old necessity for operation remained. As to iodine, it could not be injected into cysts of this kind in any strength. He had seen thirteen cases of old suppurating hydatids within the chest treated by incision, and only one died. In that case the cyst was the largest he had ever seen. At the first tapping, 156 ounces of fluid were withdrawn, and when the cyst was subsequently removed, it weighed a pound; yet the case was practically cured; but there was erysipelas in the hospital, and the very afternoon the patient was preparing to leave, a blush appeared around a small fistulous tract that remained, and septicæmia and death followed. At the *post mortem* examination, notwithstanding the enormous pressure which must have been exerted by so huge a cyst, the lung had again expanded.

I. Burney Yeo, M.D.

LUYS' NEW PROCESS FOR THE CONSERVATION AND MUMMIFICATION OF THE BRAIN IN A DRY STATE.*

The new studies of the nervous system give great interest to the laboratory work, whose object is to preserve anatomical specimens, whether it be to perfect them for demonstrations or to popularise them by descriptive or photographic means.

Until recently, the process of mummifying the brain consisted in the use of nitric acid more or less diluted, or in chloride of zinc, or in a solution of chloral. Broca extols the immersion of the brain, first in diluted nitric acid and then in glycerine; the object of the latter is to retard desiccation. But this process has the great inconvenience of shrivelling up the specimen, even to friability; so much so, that in one the brain presents only a dark hard mass of ligneous consistence and reduced to one-half of its former size. The new process has been in daily use in the laboratory of the Salpétrière, and the results are far superior to any hitherto known.

M. Variot, having noticed the favourable effect of the solution of bichromate of potass upon the cerebral substance, which swells out notably when immersed in that solution, and also of the hardening effect of carbolic acid upon the same substance, conceived the idea of employing these two agents, and submitting the brain-substance to their successive action, and lastly to the action of a glycerine bath.

The following is the proceeding. The brain being taken out of the cranium, the protuberances and the

* *L'Encephale;* and *Louisville Medical Journal.*

cerebellum are separated from it by a transverse incision. The brain lying still on its convex side, an incision is made with a thin narrow-bladed knife, running antero-posteriorly between the two mamillary tubercles. Both lobes are now taken out and accurately weighed, and plunged in a saturated solution of the bichromate of potass previously prepared. The vessel must be large enough to admit of complete submersion. Should the brain be wanted for histological studies, susceptible of being cut in small slices for microscopical examination, the bichromate of ammonia should be substituted for the bichromate of potass. The brain should remain immersed a fortnight or longer; it will then be much swollen, and the infiltration will be completed. It is then taken out of the bath of bichromate of potass, and plunged into simple water, in order to expel any excess of the bichromate. It is then placed in a bath of carbolic acid, 25 grammes to 1,000 grammes. This new process has the property of hardening the brain-substance, and reducing it almost to its normal size. A little acid must be added from time to time in order to keep up its hardening effect, which is apt to lessen. Six to ten days will suffice for its remaining in the acid bath.

As soon as the brain is taken out of the carbolic acid bath, it is plunged into a bath of pure glycerine for three or four days; the specimen may be wrapped in a cloth so as to prevent any part of the brain from emerging from the ambient liquid. It should not be left longer in the glycerine, for the brain absorbs a very large quantity of it, which might interfere with the hardening process. The brain is then taken out, placed on the flat side on soft linen, and exposed to the air. Should there be an excess of glycerine, plunge it for eight to ten minutes in a water bath. It is left now to itself, and will assume a green bronze colour, dry, and mummify almost insensibly. In two or three weeks the desiccative process will be completed. The specimens can be kept in open air or in boxes. After drying, a process for permanent preservation may be attempted. A thin layer of copal varnish and alcohol is applied with a fine camel's-hair brush. Care must be taken that the varnish reach the bottom of the most minute convolutions. As soon as the alcohol evaporates, the varnish combines with the nerve-substance, and forms an imputrescible combination, very hard, endowed with a degree of sonority when struck. Varnishing finished, the convolutions can be painted, each group of a different colour, by which they can be distinguished.

This process of preserving the brain by means of bichromate of potass, carbolic acid and glycerine, though seemingly complicated, is in reality very simple, if once the habit of using it be acquired. Such brains are now in the laboratory for two years and a half, completely imputrescible, and have lost only three-tenths of their original value. They are susceptible of being freely sliced for histological investigation.

Brains thus prepared are of vast importance for anatomical, pathological, and physiological studies, and especially in medico-legal proceedings. They are in the best possible condition for plaster-casts, and are of immense value to the student of anthropology.

ECHEVERRIA ON ALCOHOLIC EPILEPSY.

Continuing his analysis of the large number of cases of epilepsy which have been under his care in New York (see London Medical Record, April, 1881), Dr. Echeverria publishes an article on Alcoholic Epilepsy in the *Journal of Mental Science*, January 1881. A series of 572 cases is dealt with—307 males and 265 females. Of this number, 212 belonged to the middle and upper classes, and 306 to the lower; among these latter 108 were quite uneducated and 37 were outcasts, knowing nothing of their parentage. Though all cases in which alcoholism and epilepsy co-existed in definite relationship to one another are grouped together symptomatically, the author distinguishes etiologically three distinct divisions; these are thus composed:—

1st,—257 cases with alcoholism and epilepsy in plain sequential relationship.

2nd,—126 cases in which epilepsy resulted from alcoholic excess associated with the following agencies: syphilis in 67 cases; traumatic head-injuries in 42 cases; ague fever in 2 males; insolation in 9 cases; excessive chewing of tobacco in 1 male; mental anxiety in 5 males.

3rd,—189 cases, 92 males and 97 females, in whom drinking was a consequence of the epileptic neurosis, contributing to its aggravation, and to induce the same symptoms as in the two other divisions.

Dr. Echeverria was able to obtain particulars of the habits and nervous affections of the parents of 139 patients in the first division, and of 86 patients from the third division; these yielded the following results. The first series of 139 cases comprised 92 in which intemperance, either alone or associated with epilepsy, existed among the parents. In the remaining cases, the tendency to alcoholic excess, with resultant epilepsy, was inherited from insane or epileptic parents, themselves free from alcoholic complications, but who sprang, in 16 instances, from hard-drinking fathers, to which fact their nervous maladies were attributed; in no fewer than five of these families other individuals were congenital idiots. From the tables of the antecedents of these two series of cases (225 in all), and comparing them with the total number of cases of epilepsy under consideration, the following results are derived. 1. In 39.33 per cent., there was a hereditary taint received directly from the parents. 2. Parental intemperance solely originated the predisposition to epilepsy in 17.30 per cent. of the whole aggregate of cases. 3. Parental intemperance, associated with epilepsy or insanity, existed in 15.96 per cent. of the males, and in 19.24 per cent. of the females, making a total of 17.48 per cent. of the entire number of patients. Parental epilepsy was found in 12.70 per cent. of the males, and in 15.84 per cent. of the females. 4. Classing together the two preceding kinds of cases of intemperance in the parents, we obtain respectively a proportion of 20.10 per cent. in the males and 35.47 per cent. in the females. 5. Parental insanity or epilepsy, without any family history of intemperance, was met with in 4.54 per cent. of the whole epileptics.

The difference in the percentages between males and females is worthy of note. Parental intemperance, not ingrafted into epilepsy or insanity, and the existence of these in the parents without any family antecedent of drink, are both 2 per cent. lower in the females than in the males. On referring to the aggregate number of cases of intemperance in the parents, irrespectively put together, there is an in-

crease of 15 per cent. on the females over the males. A preponderance of 3.28 per cent. results again on the female side, when intemperance associated with epilepsy or with insanity appears as hereditary cause; and this difference in favour of the females is almost the same in relation to patients sprung from parents tainted with epilepsy. Henry Clarke has shown that this preponderance of hereditary epilepsy among females rises to a considerably greater degree as a predisposing cause of epilepsy and crime, the rates being 66.7 among females, against 38.1 among males (London Medical Record, 1880, p. 207). Dr. Echeverria's figures do not bear out Clarke's assertion that hereditary alcoholism is considerably less common in women than in men, nor that epilepsy in men is associated especially with alcoholism in the parents, whereas in women it is found more frequently with mental and nervous disease in the family. It is important to remember that Echeverria is dealing with much larger figures than were at Clarke's disposal. In some instances the present author traces the hereditary connection through three generations.

In the matter of the percentage of congenital idiocy caused by intemperance in the parents, the author's observations practically confirm the approximate accuracy of the figures previously arrived at by Langdon Down, Fletcher Beach, and L. N. Kerlin. The percentage of cases of epilepsy arising from intemperance (not accompanied by mental or nervous disease) in the parents may be fairly estimated at 18.

Of the 139 epileptics from the first division, with hereditary taint, no less than 64 per cent. of the males and 82.2 per cent. of the females had suffered from convulsions in childhood; although they did not become epileptic until after the age of 18, and then in consequence of intemperance.

In most of the 86 patients belonging to the third division, who were found to have hereditary taint, epilepsy was developed in childhood, or before the age of 15. It is remarkable that every one of these patients suffered from convulsions in infancy, while, in addition, 14 had left hemiplegia; 3 right hemiplegia and idiocy; 4 wasting palsy of one arm; 5 paralysis of one leg; 4 deformity of the spine from Pott's disease; 4 facial paralysis; 5 strabismus; and 5 deafness and otorrhœa. All these affections dated from infancy.

Before quitting the subject of hereditary influence, the author points out that, notwithstanding the manifest influence that the tendency to drinking has had in inducing epilepsy, both conditions are actually allied manifestations, originating from a single inherited neurotic predisposition, and successively reacting on each other. The opinion is expressed that neurotic heredity contributes to a larger extent than vice itself and misery to the prevalence of drinking. By heredity is here meant, not merely the direct transmission of intemperate habits to descendants, but also the tendency to drinking as one of the metamorphoses that often accompanies the inheritance of mental and nervous diseases, without necessary existence of alcoholism in the parental stock.

In 26 patients (9 males, 17 females) who were descended from parents affected with epilepsy or insanity, but of strictly sober habits, and with no evidence of intemperance in any of their ancestors or blood-relations, it was noted that the tendency to drinking was suddenly developed (without any other evidence of insanity), prior to the explosion of epilepsy and at the age of puberty, excepting in two females, not married, in whom the passion for drink, soon followed by fits, appeared at the climacteric period.

Referring next to those 67 cases (belonging to the second of the author's etiological divisions) which were complicated with syphilis, it is stated that in 49 of them, the fits were followed by partial paralysis; in many of them the paroxysms had a tendency to recur in a cumulative manner, with deep stupor and symptoms of cerebral congestion; or in a series of abortive fits, preceded by a severe one. Not uncommonly a single attack initiated a depressed sullen condition, with uncontrollable impulse to automatic dangerous acts, prompted by hallucinations of sight or hearing of a terrifying character. The distressing nature of these sensorial phenomena appears more conspicuously in these mixed cases than in those of simple syphilitic epilepsy (see London Medical Record, 1881, p. 134). Paralytic dementia was developed in 8 males and 1 female. Paralysis ordinarily betrays a complicated etiology of alcoholic epilepsy, which may, in simple cases, be followed by paresis in greater or less degree, but without complete inability to move the limbs.

Paralysis was less frequent when, instead of syphilis, traumatic head-injuries had joined with alcoholism in the production of epilepsy. In 9 out of 11 cases of this kind, the onset of the epilepsy coincided with the occurrence of the cranial injury. We are told that the most remarkable feature in these traumatic patients was that their paroxysms, chiefly vertiginous or nocturnal, were attended with impulsive explosions of the most dangerous character.

Coming now to the third of the author's great divisions; 86 cases, in which heredity was apparent, have already been analysed. There remain 103; in these the epilepsy was ascribed to various causes, among which head injuries and the climacteric change stand foremost. The various neurotic derangements, including irresistible craving for alcoholics, brought about by the climacteric change, are well-known. Echeverria pointed out in 1878 that intemperate instincts are often developed as premonitory symptoms of the convulsive seizures in cases of traumatic injuries to the head. In 27 out of 63 cases of this nature, intemperance, entirely unnatural to the patient, was fairly clear as one of the moral changes which foreboded the spasmodic fits.

Notwithstanding the author's division of his cases into etiological groups, he maintains that all cases of alcoholic epilepsy are clinically alike. They all present the same peculiar delusions and psychical symptoms, the same sudden instinctive explosions as incidents, the same rise of temperature, soft, rapid, dicrotous pulse, and dyspeptic derangement, along with their frequent attacks; and they all require the same management. He urges that in the majority of cases a deep cerebral disturbance, derived either from hereditary influences, or from accidental encephalic lesions of various sorts, is to be found at the root of the disease. The essential manifestations do not vary, whatever may be the manner in which alcoholism becomes the original factor of that form of convulsive neurosis called alcoholic epilepsy. Lasègue has said that every patient who, after an epileptic attack provoked by drink continues epileptic, has been epileptic previously. Echeverria prefers to state that such person has either been previously an epileptic, or belongs to the class of '*cérébraux*', individuals with a vicious or defective organisation of brain, originally related either to congenital influences or to accidental lesions.

The special etiology of alcoholic epilepsy does not give rise to any characteristic signs in its convulsive paroxysms, but the vertiginous and maniacal seizures display a wilder, more stupid, and more dangerous form than usual. Changes in the optic disc are chiefly observed when the disease is complicated with syphilis or traumatism. In some cases optic neuritis, with complete blindness, has not prevented the occurrence of vivid hallucinations of sight. Suicidal tendencies are more frequent in alcoholic than in simple epilepsy; they are often associated with homicidal impulses, and were observed in 31 males and 22 females among the author's cases.

The worst forms of epilepsy were noticed among those who had drunk whisky only, and this spirit had been used more commonly than any other by the patients. No case of absinthic epilepsy was seen by the author. When drinking was related to heredity, the vertiginous attacks prevailed among the manifestations of the epileptic malady: these were very abject and dangerous patients; one of their characteristic features was perversion of sexual instincts and excessive lewdness. These observations agree with those of Taquet (London Medical Record, 1878, p. 8) and Henry Clarke (*l. c.*, 1880, p. 207).

The negative results met with in the treatment of alcoholic epilepsy might be anticipated from the facts that epilepsy is, in itself, usually incurable, and that alcoholism, if not incurable, is always prone to relapse, the moral nature remaining unchanged. Abstinence and the ordinary treatment serve to arrest the fits in most cases where syphilis, traumatic head-injury, or other special complication does not require the use of specific means. Trephining was practised in one case of traumatic injury to the skull, but although the fits ceased after the operation, a return to intemperate habits brought about a fatal relapse.

The largest proportion of dangerous lunatics, and the most difficult to deal with, belong to the class of the alcoholic insane, mainly composed of instinctive lunatics and epileptics. Benevolence may regard it as an unjust punishment to keep them in custody after they recover from their paroxysms; but, owing to the inevitable tendency of these latter to recur, the safety of society requires that such patients should be detained under treatment. Cases of permanent recovery are cited; but their number is exceedingly small, and it would be impossible to quote them as representing the real issue of any plan of treatment.

The cerebral lesions found *post mortem* in this disease are identical with those of chronic alcoholism; the author gives an account of them, which is, however, merely a recapitulation of previous observations. C. S. W. Cobbold, M.D.

SAYRE ON THE ADMINISTRATION OF CHLOROFORM.

In the proceedings of the Louisiana State Medical Society, at its meeting, March 31st, Dr. Sayre, in a paper on hip-disease, made some remarks on the administration of chloroform. He said his plan was entirely at variance with that taught in the books, and with the doctrine of most authorities, namely, 'that air must be inhaled with the anæsthetic'. 'Air,' said Dr. Sayre, 'is the antidote to the anæsthetic, and as long as it (the air) is introduced, anæsthesia will be prevented. He, therefore, carefully excluded all the air not saturated with chloroform, and found that five, ten, fifteen, or twenty drops thus administered, according to the age of the patient, produced prompt anæsthesia, and without that muscular resistance and the contortions of the body which commonly followed its administration when mixed with air.'

The reporter then proceeds to comment severely upon Dr. Sayre's plan. It is not difficult to prove that air saturated with chloroform vapour rapidly destroys animal life. It is equally easy to show that breathing the same air over and over again will cause fatal asphyxia if persevered with. But Dr. Sayre does not really mean to administer air saturated with chloroform. Air at 70 deg. takes up 24 per cent. of chloroform-vapour. And this would be so pungent as to be scarcely respirable, or, if administered through a trachea-tube, would kill a dog in a very few minutes. Dr. Sayre also knows the danger of going on too long breathing an atmosphere without admitting fresh air; and therefore, as soon as the patient is tranquilly asleep, he would doubtless allow some fresh air to be breathed. Dr. Sayre has merely given his sanction to the plan of giving chloroform in the manner urged by Dr. Morgan of Dublin with reference to ether. The plan is to pass the expired air through a chamber containing the anæsthetic and thence into an elastic bag, from which the same air, *plus* the anæsthetic vapour, is inspired again by our gas and ether inhaler. Ormsby's ether-inhaler and our portable regulating inhaler are arranged on this plan. Chloroform and ethidene dichloride have been administered in the same way with undoubted advantage, so far as getting the patient to sleep without struggling.

But we need not allude to the more complicated inhalers to justify the limitation of fresh air. Even in the common methods of giving chloroform, although the usual directions are to avoid giving the anæsthetic vapour insufficiently diluted, the manner in which this is applied effects the breathing over and over again the same atmosphere. The handkerchief or towel held near the face is a sufficient barrier against diffusion of the expired air with the surrounding atmosphere.

Before we had thought of a plan for measuring the percentage of chloroform vapour in the air, we used to pour about a dessertspoonful of chloroform upon a piece of lint tied up in the shape of a cylinder, and hold this above the nostrils; we then placed a towel completely over the patient's face and head, and by this plan a great part of the expired air was breathed over and over again. If care be taken not to leave the lint near the nostrils during a pause in breathing, it seldom excites coughing or struggling, and answers exceedingly well; but it does not put to sleep so quickly as when all fresh air is excluded by the use of an India-rubber bag.

For three or four years we have been putting patients to sleep by causing them to breathe in and out of a bag into which we introduce a current of air charged with chloroform, and we do not give fresh air until consciousness is abolished.

The asphyxia arising from obstruction of the air-passages is dangerous in several ways, but that kind which arises, and would ultimately be fatal, from breathing an atmosphere deficient in oxygen, is removed completely with marvellous rapidity on admitting fresh air before the respiratory movements have stopped.

It appears to us that it is much easier to give

chloroform to those who breathe freely without any pause. During a pause in breathing the atmosphere near the nostrils is altered, becoming more highly charged with chloroform. Now, when the access of fresh air is stopped, the patient soon feels the want of air and breathes freely. By thus breathing, the requisite amount of chloroform is got into the blood without the necessity for making the atmosphere at all pungent. We find that, when there is neither coughing nor the movement of swallowing excited by the anæsthetic there is less than usual sickness produced. Making allowance for the general character of Dr. Sayre's remarks, we agree with him in thinking that chloroform-narcosis should be induced without allowing the patient to inhale fresh air, but that some should be introduced as soon as the loss of consciousness is perceived.

J. T. Clover.

FRERICHS ON THE SIMULTANEOUS EXISTENCE OF ALBUMEN AND SUGAR IN THE URINE.

In a paper read before the Berlin Medical Society, and published in the *Deutsche Med. Woch.*, No. 24, 1881, Professor Frerichs says that the co-existence of albumen and sugar in the urine occurs under various conditions, which must be carefully discriminated. Three forms of this anomalous process of secretion must be distinguished: one occurring in glycosuria, another in diabetes mellitus, and a third in chyluria. In glycosuria—by which Frerichs denotes cases in which small quantities of sugar are discharged within a longer or shorter time without having any obvious influence on nutrition—albuminuria is frequently met with. Of thirty cases observed and collated by Frerichs, albumen was found in fourteen, that is, in nearly one-half. They were partly acute, partly chronic, diseases of the brain. Three times albumen and sugar were observed in the urine of patients affected with cerebral aneurism, which had burst into the ventricles; four times in extensive apoplexies; twice in purulent cerebral meningitis; and once in chronic tuberculous basilar meningitis. In all these cases the ventricle was found to contain blood, with the exception of one case, in which the apoplectic focus extended to part of the cerebellum and to the cerebral peduncle. The chronic form of the disease lasted for years, and there was no opportunity of making a *post mortem* examination. In these cases Frerichs three times observed albuminuria, and also, in the further progress of the disease, simultaneous paresis of the facial nerve. The sugar in these cases amounted to from 1½ to 2 per cent., while the quantity of albumen varied. Sometimes the sugar disappeared, and then the albumen, until in some cases there was a retrogression of the renal secretion. At the same time polyuria existed; in other cases it was absent.

In all these cases of glycosuria, Frerichs thinks the secretion of albumen and sugar to have the same source, namely, a lesion of the fourth ventricle, since, when the injury is situated higher, there is secretion, not only of sugar, but of albumen also. In such cases, the prognosis must depend upon the nature of the cerebral lesion. Severe apoplexy, with lesion of the lateral ventricle, usually proves fatal in a few days; so also does cerebral aneurism. The course is more favourable in meningitis, in which recovery occurs in some circumstances. Frerichs reports two cases, in which the secretion of albumen and sugar ceased, and all symptoms disappeared.

In the chronic form, the prognosis must be cautiously made, for this mostly affects persons whose health is impaired by mental excitement or overwork, who complain of headache and indisposition, and are unable to attend to their daily avocations. Apoplectic injuries are associated with remarkable frequency with glycosuria, a circumstance that points to an effusion of blood into the fourth ventricle.

In the same manner may be explained the co-existence of albumen and sugar in cases of poisoning, especially by carbonic oxide gas. In 12 out of 17 cases there was sugar; in three there was albumen and sugar; and in one only albumen, together with cylinders.

In diabetes mellitus, the condition is altogether different. It is assumed by many that diabetes mellitus will lead to nephritis. Griesinger, in 64 *post mortem* examinations of cases of diabetes, found 32, that is, one-half, complicated with nephritis. Seegen found nephritis in 20 of 30 cases in the Vienna *post mortem* house; while Dickinson found 25 of 27 cases in the St. George's Hospital to have nephritis. With that, however, Frerichs's experience does not agree. In true diabetes, albuminuria is not frequent, nephritis rare, and occurs only in certain conditions. Out of 316 cases of diabetes mellitus, which Frerichs partly observed for ten, twelve, and even fifteen and sixteen years, there were only 16 cases of nephritis (5 per cent). Cases in which small quantities of albumen were occasionally found in the urine were never pure and simple cases, since it could be proved, at least in most of them, that other processes were involved, which of themselves could produce nephritis. Of 16 cases, 6 were complicated with arterial sclerosis; in 3 others there was pulmonary phthisis; in 2 cystitis; and in 2 arthritis with renal calculi. Therefore, only three cases remain in which no co-operating cause could be suggested. Thus it becomes evident that the general belief that the increased action of the kidneys in diabetes mellitus leads by fluxion to albuminuria and nephritis is erroneous, notwithstanding that it has numerous followers. According to Frerichs' *post mortem* examinations, which comprise more than 50 cases, true nephritis is hardly ever met with in diabetes; and where it did occur, it was of a parenchymatous nature, moderate hyperæmia of the renal substance, or there was shrivelling of the kidney. It has been believed that the changes of the epithelium of the gland, now and then occurring in diabetes, and lately described by Ebstein, might contribute towards the production of albuminuria. These changes in the epithelium have been searched for in the clinic, and have been found where there was no albumen in the urine; so that Frerichs feels rather disinclined to go as far as Ebstein does in drawing conclusions. All cases which were complicated by pulmonary phthisis proved fatal, while in all cases in which albuminuria was produced by additional cystitis, nephritis, or arthritis, there was a favourable course. An old gentleman, aged 79, who was attacked with pneumonia while in Carlsbad, and was afterwards lying ill in Nice, suffered from albuminuria, on which cystitis supervened. Gradually the sugar disappeared, and albuminuria, with cylinders, set in. Then the albumen disappeared, and at present he may be regarded as cured.

There is yet another condition in which sugar albumen and fat occur together—chyluria. It remains, however, an open question how the sugar is transmitted

into the urine along with the albuminates. Whether, as some believe, there is a damming back into the lymphatic vessels or a transition into the urine, consecutive upon chylosis, has not yet been determined by anatomical observation. One thing only has been established by Brieger—that fat disappears from the urine if it be withdrawn from the patient's food, and that it reappears in the urine as soon as it again becomes part of the food. It is much to be regretted that the experiment was not made with regard to sugar.

LEUBE ON THE PRESENCE OF BACTERIA IN THE URINE.*

Of all cases in which micro-organisms are found in the human body, by far the most interesting are those in which they appear during life, and it is to such cases that the present article refers. The localities in the living body where bacteria appear are, naturally, those which permit a more or less free communication with the external atmosphere, such as the mouth, nose, and intestine. In particular instances, the intestinal bacteria cease to be harmless inhabitants of the bowel, and excite diseases which stand in direct causal relation to them. Dr. Leube has no doubt that many instances of diarrhœa, particularly those which follow previous obstruction, owe their origin to a great development of bacteria and putrefaction, and to the consequent acceleration of the peristaltic movements. This is particularly noticeable when the diarrhœal dejections are of an extremely fœtid character, and when they are forcibly expelled by gaseous accumulations behind the fæcal masses. Leube finds in such cases that there are enormous masses of bacteria in the fæces, and that these show much more branching and chain formation than is found in the normal state. He recommends as treatment enemata of salicylic acid.

In connection with this subject a very important question arises, viz., whether, in tissues and secretions which are removed from direct sources of bacterial infection, bacteria or micrococci are to be found during life. Very different answers have been given by different observers. Leube had an opportunity of satisfying himself of the extreme accuracy of the method of experimentation of Giacosa and Nencki, who plunged in boiled mercury portions of tissues, removed from the living animal, under the spray, and found them free from bacteria; but, in Leube's opinion, these observations only show that the living organs may be free from micro-organisms, not that they are so under all circumstances.

As much doubt hangs round the condition of the urine as regards bacteria as does round that of the tissues. Many observers have shown that fresh urine can, under appropriate conditions, be preserved for long periods without the formation of bacteria. Many recently discovered facts point to the possibility that in the normal, as well as in the diseased condition, organisms may pass the glomerular membrane from within outwards. In consideration of the extreme importance of the question, Leube undertook to investigate the subject of the presence of bacteria in freshly passed urine, and the results of this inquiry are given in the article before us, as well as the details of a method of investigation, which, he thinks, may be of clinical value. He proceeded as follows. In a porcelain vessel, filled with mercury, he placed a small glass cup, having an upward prolongation, about the size of an ordinary test-tube. Having filled the latter with the mercury, the whole apparatus was heated to at least 150 deg. Cent. (302 Fahr.), and then allowed to cool. The penis of the person on whom the observation was to be made was carefully cleaned and washed, and then pushed into the mercury under the glass vessel. The patient was then told to micturate, which, in the majority of instances, was readily enough performed. The urine which passed became collected in the upper part of the glass vessel, displacing the quicksilver. The apparatus was then placed in the sun, or in a cultivating chamber. For months the urine so collected remained pure, clear, and free from bacteria; and, hence, Leube concludes that the normal human urine contains neither bacteria nor their germs.

Regarding the state of the urine in disease he has made no observations, but he recommends this method, particularly for the investigation of pathological urines for germs.

J. Graham Brown, M.D.

* *Zeitschrift für Klin. Med.*, vol. iii, p. 233.

HUTINEL ON CIRRHOSIS WITH STEATOSIS OF THE LIVER.

M. Hutinel, in a communication to the Clinical Society of Paris, on March 10 (*Jour. des Conn. Méd.*, May 1881), discusses the cases with which he has several times met, of sclerotic lesions of the liver in tuberculous patients. These cases were remarkable from the clinical manifestations which revealed their existence, as well as from the details of the histological examination. The subjects attacked were usually old drunkards, who had become tuberculous; and the liver was altered by the double influence of alcoholism and of tuberculosis, so that if, on the one hand, tuberculosis had impressed its mark on the hepatic lesion, the latter had also an incontestable influence on the evolution of phthisis.

The history of the patients was almost always alike for a shorter or longer time; insufficient food, with excess of wine, brandy, and absinthe; disordered digestion, gradual diminution of strength, and cough. The cough, at first occasional and dry, became persistent and disquieting; presently hæmoptysis or epistaxis appeared; then fever, loss of appetite, vomiting, and pain in the abdomen; and finally the patients were admitted into the hospital. There the patients were remarkable for their aspect of depression, with dry lips, red sticky tongue, pale countenance, hot skin, almost resembling typhoid patients. The febrile reaction was marked, but the thermic curve was very irregular. The colour of the skin was yellowish and earthy rather than subicteric; the conjunctivæ, however, were distinctly yellow. The liver was large, sometimes even enormous, painful, and sensitive to pressure. The abdomen was painful, especially at the right hypochondrium, the liver was voluminous, and there was slight ascites or meteorism. The urine was brown and deeply tinted, deficient in urea, turning green or red with nitric acid.

The patients coughed and expectorated; in their lungs *râles* were audible, large or small, subcrepitant, dry or moist, sometimes with sibilus; sometimes, but for the slight dulness of the summit, and the more or less marked predominance of rhonchus in the superior lobes, the existence of tuberculosis might have been overlooked, and a simple catarrh believed

in. Multiple, but scanty hæmorrhages frequently supervened, and each day a few drops of blood were lost through the nose, mouth, and lungs, sometimes even by the stomach, or petechial spots appeared on the limbs or trunk.

In general, the disease progressed quickly, and its subjects succumbed with comatose symptoms. At the necropsy, thousands of recent granulations were found, together with older caseous nuclei. The peritoneum was not inflamed, although it might often have been supposed to be so during life; it contained fluid in varying proportion, but this serosity was not very thick, and even very careful examination would but rarely show tuberculous granulations disseminated over the serous membrane. The liver attracted attention by its volume and aspect. It was large, thick, and heavy, usually smooth and yellow, like a fatty liver, whilst at the same time it was hard and resistent, like a cirrhotic liver. On examination with the microscope, the enormous quantity of connective tissue was remarkable on the one hand, showing red when cut into sections and coloured with picrocarmine. On the other hand, the fatty transformation of all the cellular elements of the parenchyma was notable. This did not resemble either the atrophic cirrhosis of alcoholic patients nor the hypertrophic cirrhosis with icterus.

From the anatomical point of view, necropsy reveals two orders of lesions: tuberculous lesions, and cirrhosis with steatosis of the liver. Tuberculosis, according to the history given by the patients, always preceded, by some months at least in these cases, the appearance of liver-affections. From the clinical point of view may be seen the evolution on the one hand, of tuberculosis making rapid progress, and of the liver-change, the character of which resembles those of marked but grave subacute icterus: and these lesions have a material influence on each other.

CYR, KUSSMAUL, PETTERS, AND FOSTER ON DIABETIC COMA.*

Prout has written that a diabetic individual may be considered as existing on the brink of a precipice; and since Prout's time the very precarious tenure by which diabetics hold their lives has come to be very generally recognised; and we are all aware of the great risks to which such patients expose themselves in travelling, probably on account of the unavoidable annoyances, as well as fatigue, which travellers, even in these days, must put up with. Violent mental emotion and bodily exertion are, therefore, two well-known dangers which we cannot be too careful to warn our diabetic patients to avoid.

It is understood well, too, that diabetics are more liable than other persons to the same sort of accidents that befal all persons occasionally: thus a diabetic is more likely to have an attack of pleurisy or pneumonia, and such inflammations not unfrequently pass on to breaking down of the lung, or even to gangrene of the inflamed portion. But besides this special predisposition to inflammatory diseases, there is a mode of termination of diabetes which has something characteristic and peculiar in it, and which has of late years received a good deal of attention from some of the best clinical observers. It differs from those already alluded to, in the alarming nature of the symptoms and the rapidity with which death may supervene in the midst of apparent good health. This it is to which the name of Diabetic Coma has been given, from coma being the final and most constant phenomenon, although it is usually preceded by excitement and dyspnœa, more rarely by nausea and vomiting.

The excitement has been described as analogous to that seen in the first stage of chloroform narcosis: the patient is a little incoherent, more vivacious than natural, and speaks rapidly. At the same time he complains of malaise, and occasionally headache is present.

This period of excitement is followed by dyspnœa, which comes on generally suddenly and with violence. The inspirations are deep; both inspiration and expiration are prolonged; the air passes well into the lungs, but, apparently, does not oxygenate the blood. The stage of dyspnœa is not always preceded by excitement, but may come on all at once and without warning.

The attacks of dyspnœa may recur several times; but finally the patient becomes less conscious of what is going on around him, and gradually sinks into coma, which becomes more and more profound until terminated by death. In some cases the coma is not preceded by the other symptoms, but may supervene suddenly, even during a period of apparent health. No convulsive movements have ever been noticed, which affords this form of coma at present a distinctive negative character. The length of time occupied by the stages above mentioned, until death supervened, has varied in the cases hitherto reported from ten to fifteen hours to three days or more, but the average has been about thirty-six hours.

The sudden termination of diabetes is undoubtedly more common in the young than in persons of more advanced age, but the most potent cause in determining this accident seems to be some excitement, either physical or mental, especially travelling, unusual bodily exertion, and the like. When we proceed to inquire more closely into what is known as to the causation of this group of symptoms, we find great differences of opinion and many conflicting statements of fact, but we shall endeavour to arrange the information which is at our disposal and to draw from it such conclusions as the state of our knowledge may permit.

Dr. Jules Cyr of Vichy ('De la Mort Subite ou très rapide dans le Diabète.'—*Archives Générales de Médecine*, 1877, vol. ii, page 641; and 1878, vol. i, page 37) has collected from the writings of various authors, and from his own practice, thirty-two cases of sudden death occurring in diabetes. From an analysis of these cases, he concludes that there are five modes in which the fatal termination may be brought about. These are: 1. Acetonæmia; 2. Hyperglycæmia, in which the excess of sugar changes the composition of the blood-serum so that the vitality of the red corpuscles is destroyed; 3. The retention of the extractive principles or the watery part of the urine, either, or both together, leading to dropsy of the ventricles and œdema of the brain; 4. Atrophy of the heart; 5. Cerebral anæmia.

Of these five assigned causes, we may dismiss numbers three and five as too vague and indefinite for profitable discussion, and we will proceed to investigate the nature of the facts, if any there be, upon which have been based the conclusions that acetonæmia, hyperglycæmia, and atrophy of the heart occur in diabetes, and how they are supposed

* From the *Birmingham Medical Review*, July 1881.

to bring about the group of symptoms, the cause of which is the present object of our inquiry.

The theory that the symptoms of diabetic coma might be due to the presence of acetone in the blood was first propounded by Kussmaul, in 1874, who was moreover the first to describe this mode of termination of diabetes (*Deutsches Archiv für Klin. Med.*, Aug. 1874).

Petters (*Prager Vierteljahrschr.*, 1837, p. 81) had already discovered acetone in the blood and urine of a diabetic patient, and had ascribed his death to acetone poisoning, and Kaulich (*Ibid.*, p. 58) had confirmed his observations.

Kussmaul experimented on the results of artificial acetonæmia by injecting acetone under the skin or into the rectum of dogs and rabbits, and observed that it produced intoxication, stupor, and slow respiration, but the quantity required to effect this was relatively very large. To overcome this difficulty, Kussmaul suggested that the long-continued introduction of acetone into the blood might induce a chronic poisoning, which, in weak conditions of the nervous system, might some time assume an acute form, just as chronic alcoholism in drunkards suddenly breaks out into delirium.

Three years later, in 1877, Dr. Balthazar Foster read a paper on acetonæmia as a cause of diabetic coma, at the annual meeting of the British Medical Association at Manchester (*Brit. Med. Jour.*, Jan. 19, 1878). He described the case of a boy who was attacked by severe dyspnœa the day after admission to hospital, and died next day. His blood presented a pale cream-like character, which, under the microscope, presented the appearance of a molecular material like fat-globules, but did not dissolve in ether. Having subsequently become aware of the suggestions as to the action of acetone as a cause of diabetic coma, he, in conjunction with Dr. Saundby, made some experiments on the effect of acetone on the blood, and having found that it makes blood milky, and that, under the microscope, blood so treated presents the same molecular character from breaking up of the blood-corpuscles, he suggested the hypothesis that the state of the blood in this case was due to the development of a large quantity of acetone in the vessels, and to its action on the blood corpuscles. He furthermore maintained it to be probable, that the dyspnœa in these cases was due to the destruction of the blood-corpuscles by the action of the acetone.

But doubts have been thrown on the statements of Petters and Kaulich that free acetone exists in the blood, and Rupstein has denied it, affirming that it is produced by the splitting up of ethyl-diacetic acid thus:—

$$\underbrace{C_6H_9NaO_3}_{\text{Sodium ethyl-diacetate.}} + \underbrace{2H_2O}_{\text{Water.}} = \underbrace{C_3H_6O}_{\text{Acetone.}} + \underbrace{C_2H_6O}_{\text{Alcohol.}} + \underbrace{NaHCO_3}_{\text{Sodium hydrocarbonate.}}$$

In the early part of 1880, Dr. Kiehn of Strasbourg published a case of diabetes terminating fatally, with dyspnœa and coma accompanied by elimination of acetone (*Gaz. Méd. de Strasbourg*, 1880, No. 2). In the discussion on this case at the Société de Médecine at Strasbourg, most of the speakers declined to accept the view that death resulted from acetone poisoning, as they maintained that acetone was often eliminated by diabetics without apparent interference with health.

About the same time, Professor Quincke of Kiel published an account of a case of diabetes in a young lady aged 16, who died comatose with dyspnœa (*Berl. Klin. Woch.*, Jan 5th, 1880). During life, the urine gave a strong reaction with ferric chloride. The *post mortem* examination disclosed no localised lesion, except lobular pneumonia and œdema of both lungs. In his paper he discussed the nature of the substance in the urine which gave rise to the red colour with ferric chloride, and pointed out that it resembles acetic ether in this coloration, in the disappearance of the reaction by strongly acidulating or boiling the urine, and by the appearance later on of its decomposition products, alcohol and acetone in the urine. But, on the other hand, the urine containing this substance did not smell of acetic ether, although ordinary urine or water containing an equal quantity, as estimated by the colour test, smelt strongly; so that, if acetic ether were present, it must have been combined with something, and it was proved that this was not an alkali, or grape-sugar, or any normal constituent of the urine. No one except Rupstein has ever been able to extract acetic ether from urine by shaking it with ether.

Quincke performed twenty experiments on animals, in order to determine the physiological effects of acetic ether. The animals died with marked dyspnœa; in only one instance did the urine give any reaction with ferric chloride, and the breath never smelt of acetic ether; glycosuria was sometimes present. Apparently, therefore, the acetic ether was rapidly destroyed in the body. Quincke concludes by stating his belief that the substance in the urine of diabetics which gives the red coloration with ferric chloride is not acetic ether, but a nearly allied body, and that there is ground for believing that the dyspnœa of diabetics is not always identical in its character or always produced by one and the same substance, but, like uræmia, it is probably produced by the combined toxic action of many substances formed by abnormal metamorphosis.

But a fresh contribution to this question was the importance newly assigned to the old fact, that the blood of diabetics often contains large quantities of fat.

The presence of an unusual amount of fat in the blood in certain cases of diabetes was pointed out many years ago by Dobson and Rollo, and has been confirmed by a great number of observers, among whom are Marsh, Hutchinson, Thomson, Lebert, Pavy, Hoppe-Seyler, etc. They have shown that an appreciable amount of fat can be extracted from the blood of diabetics by agitating it with ether. Simon found 2 to 2.4 per cent., while the normal is only 1.6 to 1.9 per cent.

In 1879, the late Professor Sanders of Edinburgh, and Mr. D. J. Hamilton, published a case of diabetes in which the patient died with dyspnœa and coma, and at the *post mortem* examination the blood was milky, and contained a large quantity of fat-globules, and fat-embola were found in the pulmonary capillaries. They suggested that capillary embolisms of the brain and lungs might be the cause of the dyspnœa and coma (*Edinburgh Med. Jour.*, July 1879).

Dr. Arthur Gamgee (*Text-Book of Physiol. Chem. of the Animal Body*, vol. i) has published the notes of a case which was in the Manchester Royal Infirmary, under the care of Dr. W. Roberts. This patient exhaled a peculiar ethereal odour, which pervaded the whole ward, and attracted the attention of the other patients. After returning from a walk, he was seized with intense dyspnœa, became subse-

quently comatose, and died twenty-one hours after the commencement of the attack. The blood was examined during the coma, without any deviation from the normal appearance being noticed. Some blood drawn from the arm by venesection coagulated normally, and the serum was distinctly milky, though not more so than is compatible with a physiological condition. At the *post mortem* examination a considerable quantity of blood was collected; after some hours a creamy layer floated to the surface, which formed about one-sixth of the total volume of the liquid. This was found to be composed of oil-globules; and an analysis of the blood showed it to contain 13.55 parts of fat per thousand. The lungs, kidneys, and brain in this case were scrupulously investigated by Dr. Dreschfeld without the discovery of any embola.

In a second case, which exhaled an intense ethereal odour and terminated by dyspnœa and coma, the blood *post mortem* was found to possess the acetone-like odour, and an analysis showed it to contain only 1.88 parts of fat per thousand.

Dr. R. H. Fitz has reported the case of a patient dying comatose after a few weeks' illness (*Boston Med. and Surg. Jour.*, Feb. 10th, 1881). *Post-mortem* examination was negative as regards all the organs, except the lungs, which contained a small number of fatty embola. The blood had a sour smell, and contained a large quantity of fat, fatty granular matter, and acetone; the bladder contained urine, which, on testing, gave the reaction of sugar.

Von Jaksch has published a case of diabetic coma in a boy, aged 13, which came on three weeks after the first symptoms of the disease showed themselves; the boy died in four days, with a rectal temperature of 91.9 deg. Fahr. The *post mortem* examination showed great emaciation, atrophy of the pancreas, catarrhal pneumonia in both lungs, catarrh of the colon, and traces of cured typhoid fever. The blood examined during life showed destruction of the red corpuscles, but no fat drops. The urine gave a red coloration with ferric chloride, and on shaking with ether acetone was obtained from it. He also describes a case of acetonæmia, in a boy who was not the subject of glycæmia, and who recovered completely after free purgation (*Prager Med. Woch.*, 1880, Nos. 20, 21.)

The destruction of the red corpuscles without fat drops in the first case is an interesting confirmation of Foster's observation, which was too hastily assumed by Sanders and Hamilton to have been erroneous.

From these cases it is plain that: 1. all cases of diabetic coma have not milky blood; 2. all cases of milky blood are not fatty blood, as assumed by Sanders and Hamilton; 3. even when fat is present in the blood, fat embola may be absent or very scarce; 4. no proof has been offered of such extensive capillary embola as would account for the alarming symptoms under discussion, especially those of nervous origin. It is, therefore, not too much to say that the theory of Sanders and Hamilton has so far received very little support.

But has the theory of acetonæmia any greater claims to our acceptance? The cardinal fact itself, the presence of acetone in the blood, is much disputed; the smell of the breath undoubtedly resembles the smell of acetone or acetic ether, but the proof of the presence of either in the blood is indecisive; and certainly no quantity sufficiently large has been found to account for the physiological phenomena for which, in experiments on animals, a large quantity is required. But the symptoms are so entirely suggestive of intoxication and, in spite of the differences of chemists, the presence of substances nearly allied to acetone both in the blood and in the urine is so indisputable, that, although we do not pretend that the toxic agent has yet been certainly identified, and may finally resolve itself, as Quincke suggests, into a multiplicity of nearly allied substances, yet the balance of evidence goes entirely in favour of the probability of the theory. The objection that acetone is often eliminated in health is obviously not a very important one; for the poisonous effect of any agent depends upon the quantity in the system, possibly also on the rapidity with which it can be eliminated, and must vary with the state of the individual; and, as Kussmaul suggested, chronic acetonæmia may create a predisposition to the development of acute symptoms from relatively small quantities. It seems probably that acetonæmia must occupy a very similar position to uræmia for some time to come, and that the solution of the problems in each case must wait for the advance of physiological chemistry, and especially for progress in the chemical manipulations of the fluids of the body.

It is quite conceivable that the blood might become so overloaded with sugar that, as suggested by Dr. Cyr, the vitality of the blood-corpuscles might be destroyed; and, in fact, we know that a condition of hyperglycæmia occurs in diabetes, for Pavy (*Croonian Lectures on Diabetes*, London: 1878) has shown that the blood in health contains, on an average, about 0.9 parts of glucose per thousand, but in diabetes the amount may rise as high as 3, 4, or 5 parts per thousand.

But we are entirely without any information as to the pathological relationships of this condition, so that we are not justified in assigning to it at the present any special part in the development of diabetic coma; although, as already remarked, it is quite possible that the excess of sugar in the blood does play a more important part than has been hitherto proved.

We have much less difficulty in assigning a proper value to the last of the causes we have to consider. We know so well the vital importance of the integrity of the cardiac muscle, and the fatal dynamical results that must ensue whenever its structural integrity is impaired, that, once we have had sufficient evidence that such a condition is frequent, we shall readily assent to the proposition that it may be regarded as a highly important factor in determining the fatal termination of these accidents.

Dr. Richard Schmitz of Neuenahr (*Berl. Klin. Woch.*, Jan. 26, 1870; London Medical Record, 1876, p. 200) has described fatty heart as an extremely common condition amongst diabetics. He says that, out of 109 diabetics, in 80 he could discover the objective symptoms of fatty heart; these being, according to Dr. Schmitz, shortness of breath, small soft pulse, weak cardiac impulse, and weak sounds, especially the first sound. Of these 80 persons, 12 died suddenly in their own homes. In two patients, who had overtaxed the powers of their hearts by a very fatiguing journey, Dr. Schmitz observed a high degree of insufficiency of cardiac action. His urgent counsels to rest the over-worked organ were unfortunately not attended to. In consequence of this neglect, the patients suddenly collapsed and died. In seven other cases bodily exertion brought on symptoms which threatened to be fatal, but ab-

solute rest in a horizontal position, and the use of stimulants caused the threatening symptoms to disappear.

THERAPEUTICS AND PHARMACOLOGY.

RECENT PAPERS.

1. Yeo, Burney.—On Treatment of Asthma at Mont Dore. (*Practitioner*, July 1881, p. 1.)
2. Fraser, D. M.—On the Bath Treatment of Scarlet Fever. (*Ibid.*, July 1881, p. 35.)
3. Hulke, J. W.—On Chian Turpentine in Cancer. (*Lancet*, June 1881, p. 1019.)
4. Allen, J. W.—Of enemata instead of Purgatives to Relieve Constipation in Typhoid Fever. (*Lancet*, June 1881, p. 1025.)
5. Cottle, Wyndham.—On Chaulmoogra Oil and Gynocardic Acid. (*Brit. Med. Jour.*, June 1881, p. 99.)
6. Crane, Albert.—On Chrisma as a Parasiticide. (*Lancet*, July 1881, p. 76.)
7. Hamilton, R., and Hope, S. Wilson.—On Inhalation in Phthisis. (*Brit. Med. Jour.*, July 1881, p. 10.)
8. Tilt, E. J.—On Bromides in Relation to Travelling. (*Ibid.*, July 1881.)
9. Fränkel, A.—On the Preparations of Digitalis. (*Charité Annalen*, Band vi.)
10. Tholen.—The Treatment of Malignant Lymphosarcoma with Arsenic. (*Arch. für Klin. Chir.*, Band xvii.)
11. Goumy, A.—On the Treatment of Typhoidal Pleurisy. (*Revue de Thérap.*, p. 331.)
12. Cheron.—On the Treatment of Lumbo-Abdominal Neuralgia. (*Revue des Maladies des Femmes.*)
13. Seguin, E. C.—Hyoscyamia as a Hypnotic and Depresso-Motor. (*Arch. of Med.*, April 1881.)
14. Traube, M.—On Sugar of Milk. (*Deutsche Med. Woch.*, No. 9, 1881.)
15. Eulenberg.—Hypodermic Administration of Iron. (*Ibid*, p. 208, 1881.)
16. Legras. — Medicated Crayons. *Repertoire de Pharm.* and *New Remedies*, July 1881.)
17. Kubassow.—On the Action upon the Fœtus of Medicines taken by the Mother. (*Dissertation Russisch. Centralb. für Gynæcol.*, No. 26, 1881.)
18. Brachet.—The Cure of Coxalgia by the Magnet.
19. Law, J.—The Mitigation of Disease Germs by Oxygen. (*New York Med. Record*, No. 25, 1881.)

1. *Yeo on the Treatment of Asthma at Mont Dore.*—Dr. Burney Yeo records in the *Practitioner*, July 1881, p. 1, his experience of the treatment of asthma at Mont Dore, which has rendered more permanent service in cases, of both spasmodic and catarrhal asthma, than any other plan hitherto adopted. Dr. Yeo is evidently not sanguine as to the same amount of success following a similar treatment in other places than Mont Dore itself, since in his opinion the altitude, 3,400 feet above the level of the sea, constitutes an important element of success. The routine treatment is as follows:—The patient, rising at 5 a.m., is enveloped in suitable clothing, and carried off in a sedan-chair to the hot spring, where he drinks a glass of the water; he is then taken to the bath-room, where he may probably be ordered to take only the foot-bath and the hot douche to the spine, or a vapour douche, or he may take a half bath, or in some cases the whole bath, the heat of which is occasionally raised even to 113 deg. Fah. in refractory cases. After ten to thirty minutes of the bath he is wrapped up in hot linen and dried, and next conveyed to the 'Salles d'Aspiration;' here he is dressed in a loose thick flannel dress. He remains breathing this hot moist atmosphere, charged with vapours of the mineralised spring, twenty minutes to an hour. After this he is carried, warmly clothed, again to the hot spring to drink another glass of water, and thence he is conveyed to his bed, which has been well *heated by a warming-pan, and he is enjoined to remain there an hour or more.*

2. *Fraser on the Bath Treatment of Scarlet Fever.*—Dr. D. Manson Fraser of the Homerton Hospital, contributes a paper on this subject to the *Practitioner*, July 1881, p. 35. Twenty-one cases were thus treated, of which two died. An instructive paper is thus concluded—'Although I do not believe that the bath treatment is a specific for scarlet, or any other fever, yet I do regard it as a valuable instrument in combating the disease. Any method of treatment that can reduce temperature, change sleeplessness and delirium into quiet rest, which averts the necessity for the use of the knife, and holds out a hope for the prevention of deafness, ought to have a recognised place in the therapeutics of scarlet fever." (Dr. Fraser states that the use of the bath has hitherto been in scarlet fever 'haphazard and occasional; it has never yet, so far as I am aware, been systematically put to the test in hospital practice; and it is barely mentioned in our best text books.' A reference to the Medical Digest, Section 80-3 will show that a host of observers have recorded their experience of the cold bath, cold effusion, cold packing, cold air, as well as hot baths, &c.

3. *Hulke on Chian Turpentine in Cancer.*— Mr. J. W. Hulke reports six more cases in the *Lancet*, June 1881, p. 1,019, that show the utter worthlessness of Chian turpentine in any cases of cancer, it neither checking the progress of the disease, relieving the pain, nor arresting the hæmorrhage.

4. *Allan on Enemata instead of Purgatives to relieve Constipation in Typhoid Fever.*—Mr. J. W. Allan, in the *Lancet*, June 1881, p. 1,025, advocates the use of enemata in cases of typhoid fever attended with constipation, the action being effective, immediate, and obtained without any disturbance of the higher portions of the bowels.

5. *Cottle on Chaulmoogra Oil and Gynocardic Acid in Skin-Diseases.*—Mr. Wyndham Cottle, in the *British Medical Journal*, June 1881, p. 999, finds that gynocardic acid—the active principle of chaulmoogra oil—may be used with great advantage, both internally and externally, in many skin-diseases. In nearly all cases, a marked increase of weight took place while either of the drugs was administered internally. Gynocardic acid can be given in pills, in doses of half a grain, thrice daily, gradually increasing to two grains thrice a day.

6. *Crane on Chrisma as a Parasiticide.*—Dr. Albert Crane, in the *Lancet*, July 1881, p. 76, draws attention to the great value of chrisma in parasitical diseases. Cases of scabies, phthiriasis, pediculi, and tinea tonsurans, have been, in Dr. Crane's hands, all equally expeditiously cured by a very few applications of the drug.

7. *Hamilton and Hope on Inhalation in Phthisis.*—In the *British Medical Journal*, July 1881, p. 10, Mr. Robert Hamilton draws attention to the great value of carbolic acid inhalations suggested by Dr. W. Williams, viz., by occasionally saturating a piece of Lister's carbolic gauze with a solution of the acid. At page 81, Mr. S. Wilson Hope suggests a cheap and efficient respirator constructed as follows. 'Cut from an ordinary roll of wadding two pieces large enough to cover the nose and mouth; a dia-

mond shape answers very well. Now remove the skin-like substance which coats the pieces; put them together, and fold them in a piece of thin muslin, to the ends of which ribbons may be sewn, and your inhaler is made.' Five or ten drops of creosote are placed between the layers of wool, which are frequently changed.

8. *Tilt on Bromides in relation to Travelling.*—Dr. E. J. Tilt in the *British Medical Journal*, July 1881, p. 11, speaks favourably of the influence exerted by large doses of bromides upon weak and delicate travellers. A dose of 25 grains at bedtime will often secure so good and restful a night as to enable one, otherwise unfitted for the exertion, to travel with safety and comfort. RICHARD NEALE, M.D.

9. *Fränkel on the Preparations of Digitalis.*—Dr. A. Fränkel (*Charité-Annalen.*, Band vi) says that the leaves of digitalis have an effect upon the circulation, which differs greatly according to their source, and possibly also to their freshness. The German Pharmacopœia prescribes a watery extract prepared from the pressed leaves; an alcoholic and an ethereal extract; and, finally, one obtained with the help of vinegar. The tincture is made by treating crushed portions of the fresh plant with six parts of alcohol; while the acetum is obtained by maceration of the dry leaves with a mixture of one part of alcohol and nine parts of vinegar. About ten grammes of the tincture are considered equal to one part of weight of the leaves of the digitalis. Digitalis, when given in small doses, has a very different effect from that obtained by large quantities. The latter are chiefly administered in cases of acute inflammation, attended with fever, while the former are employed to remove the troubles observed in heart-disease, in the so-called stage of compensatory disturbance. While the effect of smaller doses (0.5 to 0.75 gramme daily) is retardation of the contractions of the heart with increased arterial tension, larger doses (1.0 to 1.5 gramme daily) are followed by diminished arterial expansion and reduced frequency of the pulse, not unfrequently accompanied by collapse and vomiting. These latter doses were therefore administered as an antiphlogistic and antifebrile in pneumonia, pleurisy, pericarditis, and acute rheumatism, especially when the disease was naturally inclining towards a crisis and recovery. Traube explained this influence of digitalis in reducing temperature by its action upon the vaso-motor nervous system, and the vascular expansion of the skin especially. Traube's experiments have shown that the smaller doses in heart-diseases, by exciting the vagus nerve, retard the beating of the heart, and, by increasing the pressure of the aorta, regulate the adduction of a sufficient quantity of arterial blood to the myocardium, so that this organ recovers from its previous state of exhaustion, and is once more enabled to contract energetically. Only when the poisonous effect increases, paralysis of the cardiac nervous system and sinking of the blood-pressure set in. Böhm has since proved, by experiments on the exposed hearts of frogs, that digitalin has a specific effect upon the cardiac muscle itself, and upon the terminal branches of the vagus nerve connected with it, whereby the remarkable phenomena in the action of the heart are chiefly called forth. In order to test the activity of the different preparations of digitalis used in practice, dogs of middle size were curarised and injected subcutaneously with the infusion, the tincture and the acetum (the alcohol and vinegar having been removed), and the beginning of the retardation of the pulse and the enlargement of the single beats were considered as the commencement of the action. The following were the results. 1. The tincture, and also the acetum and the infusion of digitalis, are capable of exercising an exciting influence upon the inhibitory nerves of the heart, and upon the vaso-motor centre; but there are unmistakable grades of distinction in the action of the three preparations. 2. The tincture is the least reliable. 3. The action of digitalis—retarding of the pulse and increased blood-pressure setting in, after divers large doses of both the infusion and the acetum—sets in according to the individuality of the animals, and other accessory circumstances. 4. The acetum digitalis is the most powerful.

10. *Tholen on the Treatment of Malignant Lymphosarcoma with Arsenic.*—Dr. F. Tholen (*Arch. für Klin. Chir.*, Band xvii) reports four cases of lymphosarcoma, in three of which the course of the disease was greatly influenced by arsenic, while in the fourth case the disease had already advanced too far towards a fatal result. The first case was that of a man, aged 47, who suffered from an infiltrated epithelioma in the right angle of his lower jaw, of three months' duration. It could not be operated upon, because of the extent and infiltration of the neighbouring lymphatic glands, and was therefore treated with arsenic. From May 26 until the end of December 1872, the patient took Fowler's solution; partly internally, from five drops a day to fifteen drops twice a day, and partly in the form of parenchymatous injections into the tumour, ten drops each time, amounting altogether to 748 drops internally and 76 injections. This treatment resulted in the complete disappearance of the tumour. The patient was discharged on January 15, 1873, and, on returning in April 1873 and in February 1874, he showed no sign of recurrence. Examination of a small particle taken from the margin of the ulcerating tumour indicated a lamellar epithelioma, yet the appearance of the disease, as well as the favourable action of the arsenic, rather suggested an infiltrated malignant lymphosarcoma. The author, therefore, thinks it probable that epidermic cells from the adjacent healthy epidermis might have been present when the examination was made. From these cases, although few in number, Tholen is led to ascribe to arsenic a positive salutary action against cancerous ulcers, especially lymphosarcomata, which, in fact, are nearest to inflammatory neoplasms, and are quickly dispersed by other agents as well. A mischievous result has been several times observed by Billroth to follow this rapid breaking up, when iodide of potassium was energetically administered.

11. *Goumy on Typhoid Pleurisy.*—In certain very rare cases, acute pleurisy may take on a typhoid form which is extremely serious, and almost always ends fatally. Dr. A. Goumy, who has studied this disease very carefully, thus summarises in his inaugural thesis the indications for treatment (*Revue de Thérap.* p. 331). To keep up the general condition of the patient by hygienic measures, tonics, in large doses, given at an early stage, are the most urgent indication. Subsequently, the pleural liquid must be evacuated as early as possible. One puncture is made, then a second, and if the general condition do not improve, pleurotomy is resorted to. Professor Bouchard is greatly in favour of this treatment; two out of three cases, under his care, recovered under this treatment. The incision of the thoracic wall disengages the lung, and favours its gradual and progressive expansion. Antiseptic washings-out prevent

any danger of putrid infection; for this purpose carbolic acid, sulphate of zinc, a three per cent. solution of salicylic acid which has been employed by Potain, and a five per thousand of chloral which has been employed by Villemin, are all recommended. According to the recent statistics compiled by Robert, pleurotomy has yielded 78 cures out of 114 cases. These figures are satisfactory, especially if the frequency of symptomatic pleurisy be taken into account.

12. *Cheron on the Treatment of Lumbo-Abdominal Neuralgia.*—Dr. Cheron summarises as follows, in the *Revue des Maladies des Femmes*, the indications for the treatment of lumbo-abdominal and lumbo-sacral neuralgia. The first step to be taken, is to ascertain if this affection be in connexion with a functional disturbance of the utero-ovarian apparatus, or with a diathetic affection of these organs. In the first case, the treatment of the uterine affection, and the external spinal treatment, will easily dispose of this neuralgia; but if it be in connexion with an uterine affection of diathetic and constitutional origin, it will be indispensable to add to the local uterine and external spinal treatment a general treatment intended to attenuate the effects of the diathesis. If the case be one of a chlorotic patient, iron, manganese, and narcotics will be indispensable. Iodide of potassium, essence of turpentine, and quinine, are very useful in arthritic cases.

13. *Seguin and others on Hyoscyamia as an Hypnotic and Depresso-Motor.* — In the *Archives of Medicine* for April 1881, is a report by Dr. E. C. Seguin, on the use of hyoscyamia as an hypnotic and depresso-motor. It is based on the experience of the Committee on Neurotics of the Therapeutical Society. The drug, of Merck's manufacture, can be procured in pill form from Mr. Martindale and Messrs. McKesson & Robbins. These two firms supply reliable pills made of the crystalline form. Dr. J. C. Shaw having made a somewhat extensive trial of hyoscyamia in cases of insanity, gives the following results of his experience. This drug is of great service in acute mania, where the patient, from loss of sleep, and continued motion, soon becomes exhausted, and then has dry tongue, sordes on the teeth, and, perhaps, diarrhœa. If the patient refuse food, and have to be fed with the tube, this makes the state of matters still worse. Hyoscyamia is a remedy which obviates this condition very largely; it is certain in its action. He usually began by giving one-fourth to one-half grain of Merck's amorphous alkaloid, by the mouth. He has also used it in chronic mania with excitement and destructive habits, in the excitement of general paretics, in the maniacal phenomena following epileptic seizures, etc. The effects are temporary as a rule, most patient becoming quickly tolerant of it, and the dose has to be increased. Dr. A. B. Ball reports two cases to illustrate the marked efficiency of the alkaloid as an hypnotic in acute and subacute mania, the influence of the drug in controlling delusions, and its occasional tendency to paralyse the bladder. Dr. F. P. Kinnicutt found it serviceable in a case of delirium tremens, where 75 grains of chloral and 125 grains of bromide of potassium had failed to relieve. One-fiftieth grain of Merck's crystalline preparation, administered by the mouth twice a day, was found to be sufficient Apart from the hypnotic action of the drug, the only effects observed were hallucinations of a pleasant kind, and slight dryness of the throat. No alterations of temperature occurred. Dr. E. C. Seguin is inclined to think that a parallelism may be drawn between the arrest of morbid dreams and the effect of hyoscyamia in cases of delirium tremens, delusions of persecution, etc. He records an instance where a patient, who was hypochondriac to a certain extent, had suffered from insomnia, which was made the more trying, because what little sleep he obtained was troubled by fantastic and fearful visions of a panoramic character; scenes of violence, obscenity, comicality, would, as it were, pass before him almost with the vividness of hallucinations. Indeed, he had the same 'visions' at any time if he dozed for a minute in his chair. Injection of three grains of camphor failed. The crystallised hyoscyamia, in doses of one-sixty-fifth of a grain, by hypodermic injection, at bedtime, was given chiefly with the view of procuring sleep, and marked relief was obtained, the depressing and fearful dreams becoming less marked. The following interesting case is contributed by Dr. A. H. Smith. The patient was a male, aged sixty-five. Three of his brothers and sisters died insane, two of them by suicide. For the past two years he has been gradually developing melancholia, recently becoming rapidly worse. He was very restless, sleepless, unmanageable, wandering about the house, talking wildly and excitedly. Pending his removal to an asylum, Dr. Smith advised the administration of one-fiftieth grain of crystallised hyoscyamia, to be given night and morning. This produced sleep at night, and rendered the patient quiet and manageable during the day, to the great relief of the family and his own comfort.

14. *Traube on Sugar of Milk.* — M. Traube (*Deutsche Med. Woch.*, 1881, No. 9) recommends sugar of milk as a mild and reliable purgative. From 9 to 16 grammes (140 to 250 grains) of it, dissolved in about a fourth of a litre of warm diluted milk, are taken before breakfast. The author himself took as much as 24 grammes without any hurtful result.

15. *Eulenberg on Hypodermic Administration of Iron.*—Eulenberg (*Deutsche Med. Woch.* 1881, p. 208), speaking of the hypodermic administration of iron, states that the most convenient preparation for this purpose is, in his opinion, the pyrophosphate, with citrate of sodium—a preparation to be recommended on account of the large proportion (26.6 per cent.) of iron which it contains. In watery solution (1 to 5) it may be used without local irritation. Within half an hour the urine shows iron.

16. *Legras on Medicated Crayons.*—The following are formulæ recommended by Legras (*Repertoire de Pharmacie* and *New Remedies*, July 1881) for crayons to be used in the treatment of affections of the eyes and face. They are enveloped in tinfoil and paper, to keep them from melting in the hand. 1. *Crayon of Red Precipitate*—Red precipitate, 23 grains; glycerin, 150 grains; cacao butter, 300 grains. 2. *Crayon of Oil of Cade*—Oil of cade, 15 dwts.; glycerin, 150 grains; cacao butter, 300 grains. 3. *Crayon of Iodoform, deodorised*—Iodoform, 460 grains; oil of peppermint, 6 dwts.; glycerin, 150 grains; cacao butter, 300 grains. 4. *Crayon of Corrosive Sublimate*—Corrosive sublimate, 15 grains; glycerin, 200 grains; cacao butter, 415 grains. 5. *Crayon of Balsam of Peru*—Balsam of Peru; glycerin (or vaseline), each 75 grains; cacao butter, 300 grains. 6. *Crayon of Turbith Mineral (yellow Subsulphate of Mercury)*—Turbith mineral, 15 grains; salep in fine powder, 30 grains; glycerin, 150 grains; cacao butter, 300 grains. 7. *Crayon of Tar*—Norway tar; vaseline, of each 75 grains; cacao butter, 300 grains. 8. *Crayon of Opium and Belladonna*—Extract of opium; extract

of belladonna, glycerin, of each 75 grains; cacao butter, 300 grains. *Ophthalmic Crayons*—(*a*) Red precipitate, oxide of zinc, acetate of lead, burnt alum, of each 45 grains; corrosive sublimate, 7 grains; glycerin, 150 grains; cacoa butter, 300 grains. (*b*) Red precipitate, 5 grains; sulphate of zinc, 10 grains; vaseline, 150 grains; cacoa butter, 300 grains. (*c*) Red precipitate; camphor powder, acetate of lead, of each 23 grains; vaseline, 150 grains; cacao, 300 grains.

17. *Kubassow on the Action upon the Fœtus of Medicines taken by the Mother.*—Using the microphone, Dr. Kubassow has observed the effect on the heart of the fœtus of medicines taken by the mother (*Dissertation: Russisch. Centralb. für Gynækol.* 1881, No. 26). 1. Chloroform and chloral-hydrate, he finds, have first a stimulant, then a sedative effect on the fœtus, this last effect being evidenced by the dulness and infrequency of the heart's beat and the greater quietness of the fœtus. They act within five to ten minutes, chloral more powerfully than chloroform, and especially so if given per rectum. 2. Opium and its alkaloids cause prolonged irregularity of the heart's beat in the fœtus, acting more slowly but for a longer period than chloral or chloroform. Opium acts more powerfully per os than per rectum. 3. Digitalis has also a powerful and prolonged action on the fœtus. Dr. Kubassow believes, from chemical examination, that a dose of chloral hydrate taken by the mother is divided within fifteen minutes between herself and her child in proportion to their weights. The practical conclusion is that more than thirty grains of chloral-hydrate will be dangerous to the child, if given at once *per rectum* or repeated sooner than in half an hour. The same holds for one and a half grains of opium, as tincture, repeated sooner than in an hour.

James Anderson, M.D.

18. *Brachet on the Cure of Coxalgia by the Magnet.*—Dr. Brachet of Aix les Bains describes the case of a young Scotch lady, who came under his care originally for pain in the region of the ovary, which yielded readily to the application of a magnet, and subsequently was supposed to suffer from diseased hip-joint, for which she was treated for some time in her own country, and at length came to Aix. He found her anæmic and chlorotic, wasted, with exaggerated nervous sensibility, irritability, depression, sleeplessness, distaste for food; the pain in the hip was constant, violent, made worse by all attempts to walk, worse in the evening, a little better in the morning; over the region of the joint there was great hyperæsthesia when a small part was touched with the finger, less when pressed firmly with the whole hand; all the symptoms being exaggerated before her periods. There was no change in the colour of the skin or of the temperature of the affected joint, and no general elevation of temperature at night. After consultation with Dr. Provost a hysterical affection was diagnosed and the magnet applied, by which means the patient was slowly but surely cured in two months, and has remained quite well up to the present, six months after discontinuing the treatment.

19. *Law on the Mitigation of Disease Germs by Oxygen.*—J. Law (*New York Med. Rec.*, 1881, No. 23), in a series of observations on hog cholera, has come to the conclusion that the disease-germ of this affection varies in its potency according as it grows in a medium in which oxygen has free access or in one to which only a limited amount can find its way. He gives the result of series of experiments on pigs in support of this view, and quotes the researches of Pasteur, Buchner, Greenfield, and others.

Robert Saundby, M.D.

MEDICINE.

RECENT PAPERS.

1. Nothnagel.—The Clinical Aspects of Intestinal Diseases. (*Zeitsch. für Klin. Med.*, vol iii, p. 241, 1881.)

2. Stewart, Grainger.—Paralysis of Hands and Feet from Disease of Nerves. (*Edinb. Med. Jour.*, April 1881.)

3. Riegel, F.—The Diagnosis of Pneumothorax. (*Berl. Klin. Woch.*, No. 50, 1880.)

4. Feuerbach, L. A.—Constant Rhythmical Movements of the Larynx and Tongue, Dependent on the Heart's Movements. (*Ibid.*, No. 47, 1880.)

5. Pierson, R. H.—On Heredity in Cardiac Valvular Lesions. (*Jahr. der Gesell. für Natur und Heilk*, 1880-81.)

6. Thomas, J. G.—On Dengue. (*New Orleans Med. and Surg. Jour.*, May 1881.)

7. Dessau, S. Henry.—On Pertussis. (*American Jour. of Obstet.*, April 1881.)

8. Von Leube.—Syphilis of the Lungs. (Virchow's *Archiv*, Band lxxxii.)

9. Baumuller.—A Case of Acute Fibrinuria (Virchow's *Archiv.*)

10. Punier. — On Diphtheria and Tracheotomy. (*Deutsche Zeitsch. für Chir.*, Band xiv.)

11. Brieger, L.—On a Case of Chyluria. (*Zeitsch. für Physiolog. Chemie*, and *Centralb.*, No. 20, May 14.)

12. Buch, M.—Some Symptoms of Tabes. (*Archiv für Psych.*, Band xi.)

13. Leyden.—On Chronic Cervical Myelitis. (*Zeitsch. für Klin. Med.*, Band ii, p. 455.)

14. Jarisch.—On the Coincidence of Diseases of the Skin, and of the Grey Matter of the Cord. (*Vierteljahrsch. für Derm. und Syphil.*, 1880, p. 195.)

1. *Nothnagel on the Clinical Aspects of Intestinal Diseases.*—To determine whether conclusions can be drawn from the condition of the fæces as to the nature of the pathological process in the bowels, and as to the seat of the disease, whether in the rectum, colon, or small intestine, is the object of an extremely able article by Professor Nothnagel (*Zeitsch. für Klin. Med.*, vol. iii, p. 241, 1881). He concerns himself almost exclusively with the macroscopic and microscopic examination of the fæces, since this method of investigation is of much greater practical importance to the physician, and much more readily carried out, than chemical analysis. This article embodies the results of the examination of more than 800 fæces. In many cases the examination was conducted daily until death, and most people will agree with Nothnagel when he remarks that such investigations are not amongst the most delightful. In regard to consistence, he divides fæces into three classes—the firm, the pap-like (*breiig.*), and fluid, the first of which are generally normal, the others pathological. The most important clinically is the variety of pap-like consistency which is occasioned by a very intimate mixture of mucus. Often the naked eye detects nothing resembling mucus, but microscopically its presence is readily made out. Such consistency may be occasioned by admixture of fat, water, parenchymatous tissue of vegetables, and fruit, etc. Fluid fæces can never, according to Nothnagel, be occasioned by the consumption of large quantities of water. In five cases of diabetes insipidus which he recently watched, there was nothing of this kind.

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- Bulbous
- Cylindrical
- Œsophagus
- Rectum

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Breast Glasses
Breast Pumps
Carbolic Sprays
Catheters :—
- Bulbous
- Cylindrical
- Vulcanised

Caustic Cases
Chest Braces
Chiropodist's Instruments
Crutches
Cupping Instruments
Dissection Instruments
Drainage Tubes
Drainage Trocars
Ear Instruments
Ecraseurs
Elastic Appliances
Elastic Knee-Caps
Elastic Leggings
Elastic Socks
Elastic Stockings
Elastic Syringes
Enema Apparatus
Endoscopes
Eye Instruments
Fracture Apparatus
Fracture Cradles
Fracture Frames
Gynæcological Instruments
Hernia Instruments
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- Beds
- Cushions
- Ice-Bags
- Pillows
- Sheets
- Urinals

Inhalers
Lancets :—
- Bleeding
- Vaccine

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Lithotrity Instruments
Minor Operation Instruments
Microscopes
Mouth Instruments
Necrosis Instruments
Nose Instruments
Obstetric Instruments
Ovariotomy Instruments
Orthopædic Instruments
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Hard fæces in small balls, like the fæces of sheep, are not, according to Nothnagel, at all a certain indication of obstruction. With regard to reaction, there is considerable variety, fæces being acid, neutral, or alkaline at different times. In typhoid fever they are as a rule alkaline (though, exceptionally, Nothnagel has found a strong acid reaction); and in a doubtful case, if the reaction were not alkaline, it would go against the diagnosis of typhoid. The colour of the fæces may be affected by various articles of diet and medicine; the only important point is the reaction of bile-pigment, which may be frequently met with. Crystals of triple phosphate may be found in any stool, and they are not met with in typhus dejections in greater quantity than normal. Salts of lime (including oxalates) occur also in the fæces, but they appear to be of no diagnostic value. Cholesterin is a component of normal fæces, and does not possess any significance. 'Charcot's crystals' are also to be found. Of the various articles of diet which appear in the fæces, Nothnagel only touches upon such as are of particular diagnostic importance. *Starch.* In the normal condition, with an ordinary mixed diet, starch-granules do not appear in the stools, but small irregular particles, which colour blue with iodine, occasionally do occur. Any deviation from this is pathological. Muscular fibre is to be found in small quantity in normal fæces with mixed diet, but occurs to a great extent when much animal food is taken (diabetes); and it is particularly interesting to observe that in many intestinal diseases muscular fibre is to be found in large quantity in the stools, even in cases where starch does not appear, shewing how much more readily the latter undergoes digestion than the former. Fat occurs in normal fæces both in drops and in needles. Sometimes Nothnagel has found it in large quantity without any pancreatic disease. Milk, in the form of coagulated flakes, shewing countless enclosed oil-globules, is often seen in normal fæces. Such are the more important articles of food which occur in the stools. Regarding mucus, many important diagnostic indications may be derived from its presence in the fæces, in what form it appears, whether it is coloured or colourless, and in what way it is mixed up with the fæcal matter. In the adult, no mucus is to be found either macroscopically nor microscopically in normal fæces. Its occurrence is always pathological, and it may appear either (*a*) as a thin layer over well-formed fæces, or (*b*) intimately mixed up with the fæcal matter, or (*c*) the fæces may consist entirely of mucus, (*d*) as mucous cylinders in the so-called tubular diarrhœa, (*e*) in balls resembling boiled sago-grains. The latter form Virchow has considered as of vegetable origin. And, finally, Nothnagel describes a new appearance (*f*), in which the mucus takes the form of round yellow balls, quite unlike sago. The epithelium which frequently occurs in the sputum undergoes certain changes in shape, which Nothnagel describes with great minuteness, and for which the original article must be consulted. The 'round cells' which occur in the fæces have some diagnostic significance. They vary in size from that of small white blood-corpuscles up to that of the largest giant-cell. In simple catarrh of the intestine, mucus containing round cells does not occur. Its presence in the fæces indicates an ulcerative process. Nothnagel states nothing new regarding the presence of blood in the fæces; and to the presence of animal parasites, their eggs, etc., in the fæces, we need not here allude. Nothnagel proposes, in a continuation of this article, to consider the clinical bearing of the appearances here touched upon.

2. *Stewart on Paralysis of Hands and Feet from Disease of Nerves.*—Professor Grainger Stewart (*Edinb. Med. Jour.*, April 1881) describes three cases in which the symptoms pointed to peripheral disease of nerves, one of which died from double pneumonia, thus affording an opportunity for confirming by *post mortem* examination the diagnosis formed at the bedside. All three cases so closely resembled each other, as to leave no doubt that they were examples of the same malady. The disease was ushered in by severe pains in the hands, feet, legs, and arms, accompanied by tingling, defective sensibility, and paresis, passing on to complete paralysis in the regions affected, along with atrophy of the muscles involved. The recovery, which took place in two of the instances recorded, occurred slowly, all the symptoms abating until the normal functions were completely restored. The clinical features which seemed to be the most important were 'the co-existence of symptoms referable to the sensory, motor, and trophic functions of the nerves, the localisation of the symptoms in the hands and feet, the intensity being greatest at the most distal points, and the affection corresponding to certain districts of the extremities, and not to the distribution-areas of particular nerves'. A logical examination of these symptoms showed that they must be referred to the nerves, to the spinal cord, or to the brain. Now, it is certain that no known facts warrant the belief that any individual part of the brain determines all kinds of innervation in individual parts of the body, and still less that lesion of any part should be capable of producing symptoms so curiously distributed. It was thus clearly not to be referred to the brain. Were it of spinal origin, due to some affection of the cord at a point corresponding to the origin of the nerves for the hands and feet, it would have to be assumed that the lesion was bilateral, and sufficiently extensive to involve sensory, motor, and trophic structures, but at the same time to affect these only so as to produce symptoms involving the ultimate distribution of certain nerves and the different nerves in such proportion as to mark off precisely certain areas, bounded by lines encircling the limb (for such was the localisation of the symptoms in these cases); and, furthermore, it would be necessary to assume that the lesion in the upper part of the cord affecting the hands was such as not to interfere with the transmission of sensory impressions from the lower parts of the body upwards, or with motor impressions downwards (both of which nerve functions were intact). Such a conclusion is certainly not consistent with our present knowledge of the physiology of the spinal cord. Dr. Grainger Stewart was thus led by a process of exclusion to the diagnosis that the symptoms arose from peripheral disease of nerves. The third case in which this diagnosis was made died from double pneumonia, and the *post mortem* examination showed that there was degeneration in the median, ulnar, and tibial nerves, commencing with swelling of the axis-cylinder, which underwent degeneration in its whole course. The nerves in the brachial plexus were, however, in a healthy condition. In the spinal cord there were distinct changes, which were situated in part of the cervical enlargement, and to a less degree in the dorsal enlargement. The columns of Goll on both sides were affected, and also the most superficial and posterior part of the lateral columns, including part of what Flechsig terms the direct cerebellar tracts.

It did not affect any part of the grey matter, neither were the nerve-roots involved. Such a localisation is distinctive of what is known as one of the forms of Türck's secondary degenerations, viz., the ascending; and hence the author is fully justified in his conclusion that these changes were purely secondary, and could not explain the symptoms in the case. This account of minute lesions is accompanied with an excellent plate. After giving an exhaustive account of the literature bearing on this subject, Dr. Grainger Stewart proceeds to sketch the clinical history of the disease, of which we may briefly indicate the main points. Commencing with more or less fever, the first symptom which attracts attention is pain, numbness, and loss of sensibility in the affected parts, along with paresis in the muscles of the most distal points of the limbs, spreading upwards, and affecting one group of muscles after another. The organic reflexes are very rarely modified, but those of the skin are affected in proportion to the diminution of sensibility in the parts, being sometimes wholly absent. The plantar reflex is often altered, while those higher in the body remain unaffected. The patellar tendon-reflex appears to be early and completely lost in these cases. Movement, which is at first lost in the fingers and toes, affects next the ankles and wrists, and then the limbs, until at last the patient lies completely helpless. There is no special interference with the co-ordinating functions. The vaso-motor and trophic functions are affected, as is shown by atrophy of the muscles and changes in the skin. The process takes some weeks or months to arrive at its height, and then gradually improvement sets in, commencing in the upper limb. Recovery may never be quite complete. Finally, Dr. Grainger Stewart concludes this highly interesting paper by marking off this peripheral paralysis from certain other affections for which it might be mistaken, such as Landry's acute ascending paralysis, Duchenne's general spinal paralysis, transverse myelitis, diphtheritic paralysis, etc.; but for this and for the minute description of these cases the original must be consulted.

J. GRAHAM BROWN, M.D.

3. *Riegel on the Diagnosis of Pneumothorax.*—F. Riegel (*Berl. Klin. Woch.*, 1880, No. 50) observed in a case of pneumothorax a sound analogous to the so-called water-pipe murmur of Unverricht, a peculiar, bubbling, gurgling murmur, with a metallic resonance, at first during both inspiration and expiration, later only during inspiration. He holds this murmur to be pathognomonic of an open pulmonary fistula, and calls it pulmonary fistula murmur (lungenfistelgerausch).

4. *Feuerbach on Constant Rhythmical Movements of the Larynx and Tongue dependent on the Heart's Movements.*—L. A. Feuerbach (*Berl. Klin. Woch.*, 1880, No. 47) describes the case of a soldier, aged 21, who, after a blow on the side two centimètres above the nipple, at first showed no sign of injury, but on the following day and during sleep presented a downward movement of the larynx and tongue, twice for each heart's beat. After ten to twenty movements of the larynx followed a movement of deglutition. Contraction of the muscles concerned was not observed. By auscultation, he found that the first movement accompanied the first sound, and the second the second sound. Swallowing was not interfered with; only very large pieces caused a sense of roughness and obstruction at the junction of the third ribs with the sternum. The conduction of the heart's impulse to the larynx and tongue was effected, according to Feuerbach, by swelling of the lymphatic glands in this situation. The patient recovered completely.

5. *Pierson on Heredity in Cardiac Valvular Lesions.*—R. H. Pierson (reprint from *Jahr. der Gesell. für Natur und Heilk.*, in Dresden, 1880-81) gives five cases in which heart-disease existed in parent and child; in three cases, the parent had not suffered from acute rheumatism.

ROBERT SAUNDBY, M.D.

6. *Thomas on Dengue.*—Dr. J. G. Thomas, of Savannah, Georgia, at the meeting of the American Public Health Association in 1880 (*New Orleans Medical and Surgical Journal*, May 1881), submitted the following views of this peculiar disease. Dengue is self-limited, infectious in character, the specific cause, like that of yellow fever, being as yet beyond our reach. There is absolutely nothing known of its morbid anatomy. It has its own specific germ, which seems to operate, when in the human system, in a specific manner, and is susceptible of transportation. In the vast majority of cases, dengue runs its course in from three to eight days; but during the epidemic which occurred at Savannah it was observed to last much longer. The temperature will rise and fall most irregularly, and at times give hopes that the fever is at an end, and then treacherously return again, and in this way keep up for weeks, or even months. But Dr. Thomas has been unable to see anything like typhoid in it, save that the patients have a continued fever, prolonged into weeks. Such cases need not embarrass our diagnosis, although they are liable to do so; for throughout their course the semiology of dengue will always be present. The swollen and heavy-looking face, like that of a person who has been sitting over a hot fire; the congested and maturating eyes with open pupils, the hebetude of mind, the recurring soreness in the muscles and joints, with hyperæsthesia of the surface; the tough, viscid, ropy mucus in the mouth and throat; the feeling, now and then, of faintness in the horizontal position; the enlarged papillæ of the edge and tip of tongue; the regular bowels, perhaps inclined to be constipated; the great irregularity in the exacerbations and remissions; the constant inclination of the heat to fall below the normal, without any material abatement of the serious symptoms; the intense and peculiar bitterness of taste in the mouth, together with the conspicuous absence of the leading symptoms of typhoid, should enable any ordinary diagnostician to make the distinction. Aside from the nervous complications attending and following dengue, there are no sequelæ so common as those which appertain to the heart. The percentage of cases in which the heart is affected is not stated, but they are quite frequent, and, besides, very distressing, prolonging the convalescence into weeks and sometimes months. Dengue does not affect the heart in the same way that rheumatism is known to do, and in the majority of cases where heart-troubles followed there had been no special rheumatic symptoms primarily. This complication is not apt to occur in the early stages of the disease, but comes on either after the fever has subsided, or after the second or third week of its progress. It may occur in the mild as well as in the severer forms of fever. A very peculiar and characteristic symptom of dengue is a disposition to faint; this feeling often comes over patients as they lie in bed, and sometimes is a very distressing one to them, but examination of the heart reveals nothing that would seem to indicate that pericarditis had occurred as a complication. Partial

facial paralysis is also one of the occasional complications. Peripheral paralysis or paresis of the forearm and brachical muscles now and then occurs. Pulmonary complications may be traced to dengue, which in the early stages assume the form of a troublesome cough, that may remain and annoy long after the fever has subsided. It assumes the form of a catarrh of the fauces, which may extend down to the larynx, or may travel down the œsophagus. In the former, cough is the most conspicuous symptom, and in the latter there is a constant rising of phlegm in the mouth. One attack of the disease does not furnish immunity from a future one. Regarding treatment, since dengue is a self-limited disease, in the vast majority of cases the physician finds it his duty simply to make the patient as comfortable as possible, and allow the disease to run its course, being always vigilant as to the complications which may arise. A mixture of morphia, tincture of gelsemium, and aconite has been found to be a happy combination to meet many of the indications. In the rheumatic type salicylate of soda, in doses of five to twelve grains every two hours, has proved of the most decided benefit.

7. *Dessau on Pertussis.*—In the *American Journal of Obstetrics*, April 1881, Dr. S. Henry Dessau has presented the results of his experience during the past ten years in relation to pertussis. These observations are based on an analysis of three hundred and sixty-one cases, and from them it is observed that the disease attacks children from one to five years of age more frequently than at any other period of life. In regard to the season of the year when pertussis is most prevalent, it would appear that the summer and fall months are specially selected. A continuous rise of temperature, moderate in degree, lasting a week or more, was observed as an early symptom. This fact, taken in connection with a cough, occurring in frequent and short paroxysms, without the physical signs of bronchitis, he justly regards as another of the most certain early indications of pertussis. The value of the sublingeal ulcer as an early dignostic sign is not thought to be great. In 27 cases in which it was observed, the earliest date of its detection was on the fourth day of the whoop. According to Dr. Dessau's experience, the ulcer does not appear prior to the development of the spasmodic stage of the cough. His observations in the treatment have led him to believe that mild cases will end in a short space of time, under any kind of treatment, while in severe cases it is often a difficult matter to find any remedy that will mitigate the severity of the paroxysms and reduce their frequency, and none will shorten the duration of the disease to any marked degree. Chloral and bromide of potassium, in combination, while they undoubtedly moderate the severity of the paroxysms, and also reduce their frequency, do not exert any great influence in shortening the average duration of the disease. The most frequent complication was found to be catarrhal pneumonia. When bronchitis is present as a complication, it may readily be understood that the danger of collapse of air-vesicles is rendered immensely greater, and catarrhal pneumonia may almost certainly be expected. The gravity of catarrhal pneumonia as a complication of pertussis may be inferred, when it is considered that out of ten deaths from all causes, four were from this complication in a total of eleven cases treated.

8. *Von Leube on Syphilis of the Lungs.*—Von Leube relates in *Virchow's Archiv*, Band lxxxii, the case of a man, aged 34, who had been previously infected with syphilis, and two years since was ill with grave phthisical symptoms. The diagnosis was chiefly founded upon a circumscribed disease in the middle and lower parts of his right lung, the apices being free, upon the existence of laryngeal ulcerations and proliferations, and especially upon the histological condition of the expectorated pieces of tissue, which the author considered to be portions of a gummatous neoplasm. A cure was effected after repeated inunctions.

9. *Baumüller on a Case of Acute Fibrinuria.*—Baumüller relates, in *Virchow's Archiv*, the case of a woman, aged 38, who, after a former delivery had suffered from pains in the kidneys and from hæmaturia. After a second and normal delivery she had frequent painful paroxysms of strangury and tenesmus, and passed large masses of a white, compact, slimy matter through the urethra. On being examined it proved to be made up of small particles of the urinary passage, particularly of the renal pelvis and of the ureters. The suggestion that it was fibrin was not confirmed by chemical analysis. It was probably an albuminoid coagulate, although it would not dissolve in acetic acid, and remained unchanged by artificial digestion. The urine contained numerous pus-corpuscles and crystals of ammonio-phosphate of magnesia, but no epithelium. The author considers it highly improbable that it was a case of croupous nephro-pyelitis, on account of the healthy condition of the patient, and the absence of all etiological conditions, but is rather inclined to diagnose acute fibrinuria as understood by Vogel.

10. *Finner on Diphtheria and Tracheotomy.*—The author's material, collected in the wards of Professor Maas at Freiburg (*Deutsche Zeitsch. für Chir.*, Band xiv), consists of 100, or, rather, 101, cases (including one discharged before cure) of tracheotomy in diphtheria, and comprises the time from April 1st, 1877, to October 1st, 1880. Including 37 cases in which tracheotomy was not performed, there was recovery in 63 cases, or 45.98 per cent., and, deducting 8 adults, there remain 44.27 per cent. As to the frequency and the favourable result of the disease, the sex of the patient made but little difference. Thirty-three cases, or 32.67 per cent., recovered after tracheotomy was performed; but the number varied, as in all diphtheritic patients admitted into the clinic, between 14 and 100 per cent. Regarding the influence of age upon the number of recoveries, the author's experience was confirmed, that there is but little chance of recovery by operation in cases under two years, inasmuch as not one of the 19 operated on recovered. (The case of discharge before cure was under two years of age.) Most of the recoveries after operation, and, indeed, of diphtheritic patients, occurred in those more advanced in life. Most of those affected with the disease or operated upon were from two to six years old, and amounted to 61.83 and 70.29 per cent. respectively. The mortality was greatest on the day following the operation. On the fifth day the prognosis began to be more favourable. There is a predilection at the Freiburg clinic for performing inferior tracheotomy (the head hanging down). In only one was a vascular anomaly observed; a carotid artery ascending on the right side of the trachea. The author highly praises the influence of moist warmth in the form of inhalation.

11. *Brieger on a Case of Chyluria.*—Brieger relates, in the *Zeits. für Physiol. Chemie*, Band iv; *Centralb. für die Med. Wissen.*, the case of a man, aged 23, who was bodily and mentally but little developed,

and was affected with cypho-scoliosis and chorea. He was born in Berlin, which he had never left. The urine passed in the day was mostly of a light yellow straw colour; the night urine had sometimes an opalescent, sometimes an intensely white and milky character. The normal light-yellow portions of urine, with a very sour reaction, were free from sugar, fat, and albumen; but there were found in them here and there shreds, which, under the microscope, were seen to be fibrinous coagula. The chylous urine, when examined under the microscope, contained only very fine granules, and a few red blood corpuscles. When shaken with ether it cleared up, especially if solution of soda had been previously added; but in neither case completely. The urine contained albumen, that is to say, a fibrinogenous substance, besides serum-albumen. Blood-serum, added to the fresh urine, caused an immediate separation of coagula. Peptone did the same. From the ether-extract from a large quantity of urine—5½ litres—the author obtained 189 milligrammes of pure cholesterine, 105 milligrammes of platino-chloride of neurine, and 303 milligrammes of glycerophosphate of barium. The fat contained a considerable quantity of lecithin. In 400 cubic centimètres of a perfectly opaque night urine there were found 0.725 per cent. of fat, 0.395 per cent. of albumen, and 3.4 per cent. of urea. The quantity of fat in some cases considerably exceeds that of lymph. A greater supply of fat, in the form of milk and cod-liver oil, proved to be without any influence upon the quantity of fat, which, however, was reduced to 0.023 per cent. when all fat had been withdrawn from the food.

12. *Buch on some Symptoms of Tabes.*—M. Buch (*Archiv für Psych.*, Band xi) states that, in two cases of tabes, he found the following symptoms, which have been seldom observed, and are rare. In one case the right testicle, especially the epididymis, swelled considerably in the course of a night. Firm pressure caused no pain, and there was nothing abnormal in the penis. The feet, which had been very cold, now seemed to the patient especially so. After a few weeks, the symptoms disappeared without any special treatment. In the other case, hæmorrhagic vesicles formed from time to time in the mouth, and burst spontaneously. The author considers an abnormal condition of the vaso-motor centres to be the cause of both symptoms. In the second case, examination of the semen proved the absence of seminal corpuscles, which had already been wanting in the first stage of the disease. Of this also Buch considers the cause to be an affection of the vaso-motor centres. On the other hand, the patellar tendon-reflex was slow in disappearing in this case. In the first case, pain and increased reflexes appeared simultaneously. The time of the reflex action evidently depended upon the intensity of the irritation; the greater this was, the greater was also the extent of the response. Very interesting phenomena were also, in the first case, the decrease of faradic sensibility in limited spots; and in both cases the want of relation between mechanical and faradic irritability.

13. *Leyden on Chronic Cervical Myelitis.*—The patient in this case (*Zeitschrift für Klin. Med.*, Band ii, p. 455), a man, aged 56, had suffered for years from pain in his lower limbs, when rapidly, in the course of two months, there appeared pain, paralysis, and rigidity, first in the left, then in the right arm, with a more marked loss of power in the lower limbs. Two months later, first the left, then the right arm began to diminish in volume. During the next four years, without any particular disturbance of sensation, all four extremities became affected with rigidity, paralysis, and secondary muscular atrophy. Ultimately the disease diagnosed as cervical myelitis attacked the medulla oblongata; and disturbance of articulation and respiration was followed by death. There had been no bed-sores, and the functions of the bladder had never been to any extent affected. On *post mortem* examination, the cervical enlargement of the cord was found flattened, especially on its posterior aspect, where the pia mater was thickened and infiltrated. The posterior columns and posterior parts of the lateral columns were sclerotic, the grey matter was thin and brittle, the ganglion-cells shrunken and sclerotic. In the thoracic part of the cord, and in a less degree in the lumbar part, the same changes were present. The anterior part of the cord was unaffected. Professor Leyden considers the case to be that named by Charcot amyotrophic lateral sclerosis, the affection of the posterior columns and posterior parts of the lateral columns not being of the nature of a 'system-disease'. He says he has met with only one authenticated case of Charcot's primary lateral sclerosis, most so-called cases being progressive paralysis of the medulla oblongata with muscular atrophy, a primary degeneration of the motor tracts, with atrophy of the ganglion-cells, answering to Charcot's amyotrophic lateral sclerosis.

James Anderson, M.D.

SURGERY.

RECENT PAPERS.

1. Atherton.—Death from Chloroform Inhalation Prevented by Opening the Larynx. (*Canada Lancet*, p. 301.)

2. Von Bergmann, E.—The Treatment of Compound Fractures. (*Aertz. Intell.*, No. 37, 1880.)

3. Michael, J. E.—On Circumcision. (*Maryland Med. Jour.*)

4. Moster.—On the Dangers of Peritoneal Transfusion. (*Deutsch Archiv für Klin. Med.*, vol. xxviii.)

5. Braun.—On Radical Cure of Hernia. (*Berl. Klin. Woch.*, Nos. 4 and 5, 1881.)

6. Guterbock, P.—Drainage in the Treatment of of Hydrocele by Incision. (*Arch. für Klin. Chir.*, Band xxvi.)

7. Gottstein.—The Different Forms of Rhinitis; and Treatment by Plugging. (*Berl. Klin. Woch.*, No. 4, 1881.)

8. Jardin.—Electrolytic Urethrotomy. (*Moniteur de la Policlinique*, March 20, 1881; quoted in *New York Med. Record.*)

9. Duerueil.—On Intradeltoid Operation. (*Gaz. Méd. de Paris*, Nos. 11 and 13, 1881.)

10. Fenger.—The Surgical Treatment of Cavity in the Lungs.

11. Paul, Constantin.—The Vaccination of Erectile Tumours. (*Revue de Thérap., Méd., Chir.*)

12. Troizki, J.—The Treatment of Burns by Bicarbonate of Soda. (*Wratsch*, No. 4, 1881; and *St. Petersburg Med. Woch.*, No. 19, 1881.)

13. Lister.—On the Radical Cure of Hydrocele by the German ('Schnitt') method. (*Brit. Med. Jour.*, June 25, 1881.)

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1. *Atherton on a Case in which Death from Chloroform was Prevented by Opening the Larynx.*—The following interesting case, in which death from chloroform seems to have been prevented by opening the larynx, is reported by Dr. Atherton in the *Canada Lancet*, p. 301. A man, aged 39, had inhaled chloroform for about half an hour for the

removal of a cyst from the eyebrow. The towel was removed, and the patient continued breathing a minute or two, when suddenly it stopped; and, in spite of pulling forward of the tongue and lower jaw, etc., and attempts at artificial respiration, nothing was got from him but one or two gasps two or three minutes after breathing stopped. For perhaps ten minutes, these efforts were continued. Then, the face becoming livid, the trachea was opened. Immediately on entering the trachea, air whistled through the opening, and respiration, with little or no interruption, was established. [The writer thinks it strange that the stoppage should have occurred after the removal of the chloroform. The reporter believes the explanation of it is that whilst the muscles supporting the larynx were relaxed, and the aryteno-epiglottidean folds nearly approximated, some liquid eructated from the stomach, and partially closed the larynx, making it valvular, and allowing air to pass outward and not inwards. This condition is often described as a falling back of the tongue. Drawing the tongue forward is, however, not always an efficient remedy, especially if forcible expiration, natural and artificial, have been made. In such cases, almost all the air has been forced out of the chest, and no more can enter. Sometimes the way is opened by forcibly pulling up the chin as far as possible away from the sternum. Howard's method of artificial respiration, by letting the head fall back over the edge of a couch, acts in the same way; but it appears that sometimes all these methods fail. Perhaps, even then, in the agony of death, a violent spasmodic action of the accessory inspiratory muscles may take place; these muscles include the dilators of the glottis, and those which connect the hyoid bone with the jaw, and if the lower jaw be sufficiently elevated, the air-passage may be opened. But we should not wait for this spasmodic gasp too long; and the reporter thinks the rule should be not to operate so long as the radial pulse is distinctly felt; but if this fail, to open the larynx at once.—*Rep.*] J. T. Clover.

2. *Bergmann on the Treatment of Compound Fracture.*—In a contribution to the *Aertz. Intell.-Blatt*, No. 37, 1880, of which an abstract is given in the *Wien. Med. Woch.*, No. 10, 1881, Prof. E. von Bergmann states that, in his treatment of penetrating fracture, he deviates from the rules that have been laid down by Volkmann for the management of open fractures in general. Penetrating fracture, by which is meant that form of fracture in which the skin is perforated at one small spot only by the sharp extremity of a fragment of bone, was to be distinguished from open fracture, even before the time of strict antiseptic dressing of wounds; since in the former injury the prognosis has always been far more favourable than that of the latter, in consequence of the smaller size of the wound, and of the less extensive contusion of the soft parts. In dealing with such cases, even when brought to him before the commencement of traumatic local reaction, Dr. von Bergmann does not dilate the wound and endeavour to establish primary disinfection of the injured structures. He restricts his action to careful cleansing, by solution of carbolic acid, of the surface of the injured limb, and to washing out the small wound and removing blood-clot. The whole of the limb is then enclosed in salicylic wadding, compressed by an elastic bandage, and finally fixed in a plaster-of-Paris splint. In all of eight cases thus treated, the author obtained good results; although in half of these instances the bone had protruded through the wound, and could not be reduced without some difficulty. In some of the cases there was much laceration of the soft parts, with swelling of the limb and considerable extravasation. In cases of compound fracture with large and gaping wound, the author follows Volkmann's practice of attempting primary disinfection; but this he does with great care, as he does not consider that this practice is absolutely free from bad results. This is indicated by those cases in which amputation has to be performed in consequence of phlegmon about the seat of fracture, which cases, even when terminating favourably, prove at least failure of the antiseptic treatment. The author has, moreover, observed one case of fatal septicæmia after such treatment of compound fracture. He is convinced that thorough disinfection cannot be established without risk; and for this reason he thinks that, in the treatment of penetrating fracture, it is well to retain the advantage of having but a small wound to deal with. Much importance is attached in such cases to compression of the limb by elastic bandaging, which, as it is applied over wadding, is not likely to do harm. The absorption of extravasated blood is thus much accelerated, and the danger of decomposition much diminished. The most important advantage of elastic compression in cases of compound fracture consists, according to the author, in its favouring the reunion of detached fragments of bone. That such reunion does take place, he has proved both by pathological specimens from man and by experiments on animals. W. Johnson Smith.

3. *Michael on Circumcision.*—Dr. J. Edwin Michael writes in the *Maryland Med. Jour.*: 'My method, which I learned in Vienna about eight years ago, and have since modified in some trivial particulars, has the advantages of being neat and cleanly, and avoiding the mistakes which result from traction. It is as follows. Having covered the anterior portion of the penis with a towel, I grasp it with my hand, and, being careful to allow no slipping between prepuce and glans, gradually increase the pressure until it has acquired considerable force. Then a tight band, elastic or not, is placed round the organ as close as possible to my hand. When my hand is removed I have the natural relation of the parts undisturbed, and the penis free from blood. The first step of the operation is to pass a director round between glans and prepuce, to find adhesions and remove them if any exist. The prepuce is then split up to the corona with a bistoury on a director, and afterwards the two lateral halves are trimmed off according to taste with scissors. The relation of the parts being preserved, and no traction being necessary, we can in this way see exactly what we are doing. The absence of blood also adds greatly to the neatness of the operation. After all the cutting has been done it is usually easy to find the orifice of any artery big enough to bleed, and it can be twisted or ligated. The edges of mucous membrane and skin are thus neatly stitched together with fine silk or wire, and sometimes the line of incision is carefully painted with collodion. If any ulcers be present, they are well treated with fuming nitric acid. A layer of wet lint or cotton is then placed round the part, and the whole included with a bandage firmly applied. The last step is to remove the constricting band. In twenty-four hours this pressure-bandage is removed, and the wound treated on general principles. This plan has been followed by such universally satisfactory results that I have felt justified in bringing it forward, not, of course, as anything original, but as

offering what I consider useful modifications of the usual operation of circumcision.'

4. *Mosler on the Dangers of Peritoneal Transfusion.*—Professor Mosler (*Deutsch. Archiv für Klin. Med.*, vol. xxviii) refers to the successful cases of Ponfick with injection of defibrinated blood into the abdomen (already recorded in the London Medical Record, vol. viii, p. 12), and to the observations which we have also recorded of Golgi and Bizzozero (*ibid.*), indicating the excellent effect of such injections in increasing the richness of the blood, as tested by observations on the increase of blood-corpuscles and hæmoglobin. Mosler assumes as an indication for transfusion the leukæmic quality of the blood; and the observations of himself and others on the effect of transfusion in leukæmia indicate that it should be done repeatedly in similar cases. It could not as yet be repeated often enough, on account of the dangers and difficulties of transfusion into the vessels. It being reported by Ponfick and Bizzozero that peritoneal transfusion presented greater advantages, the author resolved to try it on his patients, and especially to study the influence of repeated transfusion in the same patient. The first patient who appeared adapted for peritoneal transfusion was a man, aged 27, who had had sixteen parenchymatous injections of Fowler's solution of arsenic into a chronic tumour of the spleen without any symptoms of irritation of the peritoneum. Peritoneal transfusion appeared to be indicated by the anæmia, which had set in in a very high degree; besides, it was of especial interest to be able to state whether the splenic tumour, which had considerably diminished after the injections of Fowler's solution, would show a yet greater diminution. After repeated peritoneal transfusion, microscopic examination of the blood showed, besides a diminution of the red corpuscles, a large number of microcytes. The origin of the tumour was referred to intermittent fever and syphilis. On Dec. 8, 1880, 40 centigrammes of defibrinated blood were slowly injected, by means of a well disinfected injecting apparatus, through a puncture made in the left side of the abdominal wall. On the place of puncture, a carbolised compress was laid, fastened with a gauze bandage; and above this a bag of ice was placed. In the morning and evening the patient received a dose of 15 milligrammes (nearly a fourth of a grain) of pure opium. He complained of pains in the place of puncture, both during the operation and for some time afterwards. The temperature in the evening was 38.4 deg. Cent. (101 deg. Fahr.); the following morning 37.2 deg. Cent. (99 deg. Fahr.); no alteration could be noticed in the urine and blood. On Dec. 21, the peritoneal transfusion was repeated with the same apparatus. The place of puncture was the linea alba, about 7 centimètres below the navel. The transfusion, of 130 cubic centimètres of blood, was done gradually. The patient complained while the puncture was made, and also afterwards, of pains in the place of puncture, and upwards. Hourly measurements, after the transfusion, showed a moderate elevation of temperature. The pulse was 110 per minute. In the night the pains increased. On Dec. 21, in the morning, the temperature was 39.6 deg. Cent. (103.3 Fahr.), pulse 128; there were symptoms of peritoneal irritation. The abdomen was distended; he had considerable difficulty in breathing; the heart's action became irregular; and death occurred on the following night. The *post mortem* examination showed diffuse peritonitis, a tumour of the spleen, and a high degree of syphilis of the liver. In this case, observation shows that peritoneal transfusion cannot be recommended in all conditions of the vascular system. The author suspects that the repetition of the transfusion was the cause of the peritonitis; since neither were the instruments dirty, nor was there any injury to the intestine, nor abnormality of the injected blood. In this case an interval of twelve days occurred between the two operations, in which the patient showed no signs of peritonitis. He is inclined to think that the immediate cause of peritonitis here was an increased vulnerability of the peritoneum, due, probably, to the previous transfusion, as well as to the disease from which the patient suffered. He points out that peritoneal transfusion at short intervals must not be regarded as a harmless operation; and that it is probably contra-indicated in inflammatory and other diseases of the abdominal organs attended with a tendency to peritonitis.

5. *Braun on the Radical Cure of Hernia.*—H. Braun reports in the *Berl. Klin. Woch.*, for 1881, Nos. 4 and 5, the results of nineteen operations for the radical cure of hernia in the clinic of Professor Czerny at Heidelberg. Sixteen patients were operated on. There were sixteen cases of inguinal hernia, one of femoral hernia, two of omental hernia adiposa in the linea alba. Two patients died; one of pyæmia; the other, a child, of convulsions, which were in no way connected with the operation. Of the remaining fourteen patients, two adults with hernia in the linea alba, and three children, were entirely cured; in the rest, the hernia sooner or later returned; it, however, remained small, and could be retained by trusses. The author would limit the indications for the operation in adults to cases of incarcerated hernia, of very large or irreducible hernia, and to fæcal fistula of the hernial sac. In children, there is more permanent success, though the danger of the operation is also greater, since the dressings cannot be kept clean. Suppuration in the hernial sac appears, as regards the final result, rather unfavourable than otherwise.

6. *Güterbock on Drainage in the Treatment of Hydrocele by Incision.*—P. Güterbock (*Arch. für Klin. Chir.*, Band xxvi) recommends that, in cases of the antiseptic treatment of hydrocele by incision, drainage should be made from a counter-opening in the inferior posterior circumference of the scrotum, so that the original incision in the anterior superior portion of integument may be completely closed with sutures.

7. *Gottstein on the Different forms of Rhinitis and their Treatment by Plugging.*—Gottstein (*Berl. Klin. Woch.*, 1881, No. 4) recommends plugging of the nostrils in atrophic rhinitis, in accordance with his directions. In the hypertrophic form of the disease, plugging is useless. In deficiences of the septum, it is attended by a good symptomatic result. The author relates a case of a deficiency as large as a shilling, resulting from the hypertrophic inflammation, or perichondritis, and caries respectively of the nasal cartilage in which repeated examinations gave no indications of syphilis. The author does not think much of medicated plugs.

8. *Jardin on Electrolytic Urethrotomy.*—In 1867, Mallez and Tripier first proposed a new method of obviating the contractions from strictures, after operating by the use of electrolysis. But the apparatus which they had devised was not applicable to all cases, the urethral sound not being supplied with a conductor. Thus the electrolytic action could not be limited to one particular point. Dr. Jardin has

recently improved and, as he thinks, perfected the older apparatus. The new instrument consists of two parts. One (*Moniteur de la Policlinique*, March 20th, 1881; quoted in *New York Med. Rec.*) called the female branch is essentially a grooved urethral director, having a coating of gum, which extends on either side as far as the central groove. At one extremity this branch has a little plate attached to it, which allows of readily handling the instrument. The other end is gently curved and drawn out into a non-conducting portion. At this point there is also a little contrivance, serving to fix an exploring bougie. The male branch is made to slide along the groove of the female one. It consists of a metal rod, furnished at one end with a blade, having a dull edge, and hollowed out at its centre. The other end is constructed so as to afford attachment for an electrode. The operation is then performed as follows. The conducting bougie is first introduced into the urethral canal, then the female branch of the instrument is passed and pushed beyond the stricture. Now the male branch is introduced along the groove of the other until the blade comes into contact with the stricture. The instrument is connected with a strong battery, the negative pole being connected with the urethrotome, and the positive one applied by a suitable electrode over the thigh. At the latter point only a slightly smarting redness is produced, whereas the stricture is gradually severed. Bleeding never takes place, and after the operation the patient may resume his occupation. Micturition is immediately accomplished with ease. This apparatus has been tried in fourteen cases by its inventor, and has given entire satisfaction. The following advantages are claimed for it. The operation is easy of performance, and not painful. Hæmorrhage never accompanies it. A febrile movement is not set up by it, there being no violence, and only the formation of an eschar. *Sondes à demeure* are not necessary, and the patient can at once pass his urine after the operation. The patient can also immediately continue his work after completion of the electrolysis. Finally, the danger of remote complications is entirely overcome by this method. The instrument was made by M. Ch. Dubois, 31, rue Saint-Andre-des-Arts, Paris.

9. *Dubrueil on Intradeltoid Amputation.*—The author (*Gaz. Méd. de Paris*, 1881, Nos. 11 and 13), following the treatment of Grynfelt and Richet, and the directions of some Prussian observers, recommends the amputation of the upper arm to be performed as much as possible within the region of the deltoid muscle, and that this latter should be preserved by the formation of flaps, in order to enable the patient to raise the stump. In a historical essay, he defends this high amputation of the upper arm (known as intradeltoid amputation), in opposition to the view of the elder Larrey, who, favouring exarticulation of the upper arm, declared leaving a short stump of it to be useless.

10. *Fenger on the Surgical Treatment of Cavity in the Lungs.*—On November 26th, 1880, Dr. Fenger performed an operation at the Cook County Hospital, which, on account of its rarity and importance, deserves extended notice. The patient, an Italian, male, had a large gangrenous cavity in the right lung, extending from the second to the fifth rib and from the sternum to the posterior axillary line. An extremely offensive odour, like that of rotten eggs, surrounded the patient, and, in coughing, small quantities of greyish fetid matter were brought up. The cavernous respiration showed the cavity to be in the substance of the lung. No empyema was present. Dr. Verity withdrew, by means of a hypodermic syringe, a thin, greyish, fetid fluid from between the third and fourth ribs. It was agreed by the medical men in attendance to attempt to save the patient's life by an operation. Consequently, the patient having been anæsthetised, Dr. Fenger made a large transverse incision between the third and fourth ribs, and one and a-half inches to the right of the sternum, dissecting carefully through the overlying soft tissues, down towards the pleura. When the intercostal muscles were laid bare, an aspirator needle was introduced to ascertain whether or not the subjacent lung was adherent. As the needle did not oscillate conformably with the respiratory movements, he concluded that there was no fear of opening into the pleural cavity in this place, and consequently the knife was introduced into the cavity, giving means of escape to a quantity of very fetid matter. A counter opening was made at the posterior border of the axilla, and, after the evacuation of a pint and a half of fetid matter, the cavity was washed out with a two and a half per cent. solution of carbolic acid. A subsequent cough caused a coherent, yellowish-white, gelatinous mass to appear at the large anterior opening. This slipped back several times into the cavity, but was finally obtained by introducing a large forceps and the index finger into the cavity. A microscopical examination of this mass demonstrated it to be the cyst of a large echinococcus. A large drain-tube was now passed in at one opening and out at the other, and voluminous antiseptic dressing applied. The patient at the time of the report was in a fair way to recover, and, unless something untoward supervened, would leave the hospital in a few days.

11. *Paul on the Vaccination of Erectile Tumours.*—Dr. Constantin Paul, at a meeting of the Medical Society of Paris, May 1881 (*Revue de Therap., Med. Chirurg.*), in discussing the vaccination of erectile tumours, observed that it is the custom to attack these tumours by means of isolated spots of vaccination, and that cicatrisation is therefore not so complete as it is desired. By a modification of the procedure, however, Dr. Paul has, he says, obtained completely satisfactory cures in several cases, such as an erectile tumour of the neck, of the size of a five-franc piece, and other large nævi in various situations. He employs for this purpose calf lymph, because a great deal of lymph is required. He begins by covering the whole or a part of the tumour which has to be cured with a layer of vaccine; he then scratches the epidermis covering the tumour until the absorbent vessels of the dermis are exposed. He is in this way able to obtain a cicatrix of whatever extent he desires. When the crust (which is sometimes horrible to look upon) that covers the enormous pustule has fallen off, a cicatrix remains to the extent designed by scarification. The flow of blood may sometimes be abundant, and this has especially been the case in nævi of the lobule of the nose. Nevertheless, the cicatricial lines appeared subsequently as if drawn with a pencil. If the erectile tumour be very extensive, as happened in a tumour of the neck, it may be divided into parts, which may be dealt with one after the other, provided always that the whole operation be completed at the same sitting. The operator passes then from one portion of the tumour completely scarified to the neighbouring part, immediately that the blood is coagulated on the first. It is necessary to have at

one's disposal a great deal of vaccine, which may be obtained from the calf.

12. *Troizki on the Treatment of Burns by Bicarbonate of Soda.*—J. Troizki adds his testimony to that already published as to the value of solution of bicarbonate of soda as a dressing for burns (*Wratsch.*, 1881, No. 4; and *St. Petersburg Med. Woch.*, 1881, No. 19). He says that during the previous year he noticed twenty-five cases of burns, mostly of a severe nature. Sixteen of them were received in a fire in a village, during a strong wind, when the inhabitants, in order to save their property, were obliged to work in the flames. In all these twenty-five cases bicarbonate of soda was exclusively applied. The result of this treatment was so favourable, that the author considers himself justified in pronouncing this remedy the best and most efficient in burns of all kinds and degrees. Even in extensive burns of the second and third degrees, the pain was soon alleviated by the application of compresses soaked in a solution of bicarbonate of soda; and the wounds soon healed, leaving but few scars, and no impairment of the functions of the affected parts. No evil results from this extensive application of bicarbonate of soda, which might suggest the reception of carbonic acid into the blood, were noticed. Of the ten cases of which a detailed account is given by the author, one rather serious case may be related, in which the burns had spread over half the body. The whole face was stripped of epidermis, the hair was singed off, and the front of the neck, chest, and abdomen, and the dorsum of the foot, presented burns of the second degree; burns of the third degree were also found on the right mammary gland and on the right forearm, all the muscles of which were exposed as if prepared by dissection. A solution of the bicarbonate of soda was applied to these burns with a most conspicuous success: the patient felt relieved, and a cure was effected in four weeks; but the healing of the burns on the right breast and on the forearm lasted two months. The scars which were left were insignificant, and the mobility of the fingers was nearly normal. As regards the application of bicarbonate of soda in burns, the author distinguishes three methods. 1. Powdered bicarbonate of soda is strewn over the burned parts. 2. Linen rags, sprinkled with a solution of bicarbonate of soda (1 in 50) are laid on; as soon as these rags become dry, they are replaced by others or are moistened again in the solution. 3. Linen rags are applied in the same manner, but are kept constantly upon the burns, and moistened by pouring the solution on them. The first method suffices only for burns of the first degree. Change of the moistened rags is chiefly adapted for burns of the third degree, attended with much suppuration. In exchanging the dry rags, the pus which has accumulated underneath them must be carefully washed off, that it may not be received into the blood; and then a fresh rag soaked with the solution must be placed upon the clean granulating surface. The third method is applied solely in burns of the second degree. Changing the compresses would in these cases only irritate the exposed surface, and, by causing a more copious suppuration, delay the healing process. The beneficent effect upon burns of the solution of bicarbonate of soda the author considers to be due to the anæsthetic, antiseptic, and disinfecting property, which the bicarbonate owes to the ready disengagement of carbonic acid from it. Herr Troizki has also made experiments with other antiseptic and disinfectant agents, but has come to the conclusion that these are inferior to the bicarbonate of soda in their effect upon burns. Besides, the application of some of these, as for instance of carbolic acid upon large surfaces, would be dangerous; on small surfaces they very thoroughly disinfect the secretions of wounds; but these disperse more slowly than by the use of soda, and the anæsthesia, so desirable for the patient, is not so complete as when soda is applied.

13. *Lister on the Radical Cure of Hydrocele by the German (Schnitt) Method.*—In the *Brit. Med. Jour.*, June 25th, 1881, three cases are reported in which Professor Lister resorted to this method. In one case, the injection of the sac with the Edinburgh tincture of iodine had already failed. The operation is thus performed. The parts are first shorn and purified, salicylic cream, to make assurance doubly sure, being used for the latter purpose. Two blunt straight needles are passed through the skin and the sac of the hydrocele, in order to retain the latter in position; a free incision is then made between the two needles, and the sac opened up; bleeding points are ligatured, the wall of the sac is stitched to the skin, and the wound left open; antiseptic precautions are observed. The carbolic gauze was found to be too irritating for the scrotal skin, giving rise to much pain, and, in one case, to some vesication. In the third case the new eucalyptus gauze was used, and was found to be equally effectual in preventing decomposition, and to be quite unirritating. Professor Lister, therefore, advises its use in operations about the scrotum. All the cases were successful, and the third patient experienced no pain at all.

Dawson Williams, M.B.

DISEASES OF CHILDREN.

RECENT PAPERS.

1. Tschamer.—On the Contagium of Variola, Vaccinia, and Varicella, and their Relationship to each other. (*Archiv. für Kinder.*, vol. ii, part 3.)

2. Filator.—On the Etiology and Diagnosis of Acute Peritonitis of Children. (*Ibid.*)

3. Turin.—On the Temperature of Tubercular Meningitis of Children. (*Jahr. für Kinder.*, vol. xvi, part i.)

4. Russow.—The Influence on the Weight and Length of Children of Natural and Artificial Feeding. (*Ibid.*)

5. Woronichin.—Record of Continued Weighing of a Child during Dentition, from six months old to cutting of last milk-tooth. (*Ibid.*)

6. Gowers.—On Paralytic Chorea. (*Brit. Med. Jour.*, April 23, 1881.)

7. Smith, Eustace.—On Milk-Indigestion in Young Children. (*Ibid.*, June 4.)

8. Smith, Lewis.—The Treatment of Pleurisy in Children. (*New York Med. Record*, April 1881.)

9. Bowditch.—Relations between Growth and Disease. (Annual Meeting of American Medical Association.)

10. White.—Infantile Eczema. (*Ibid.*)

11. Goodwillie.—Thumb Sucking. (*Ibid.*)

12. Nunn.—Treatment of Diphtheria. (*Ibid.*)

13. Bradford.—Clubfoot. (*Ibid.*)

14. Blake.—Disease of the Tympanum in Acute Exanthemata. (*Ibid.*)

15. Jacobi.—Progress in the Knowledge of the Acute Contagious Diseases and Infections. (*Ibid.*)

16. Parker.—Remarks on the Curvatures of the Long Bones in Rickets. (*Med. Times and Gaz.*, April 2, 1881.)

17. Ashby.—Notes on Typhoid in Children. (*Practitioner*, June 1881.)

18. Lee.—On Whooping-Cough. (*Lancet*, April 30 and May 7.)

CASES OF CHILDREN'S DISEASES IN HOSPITALS.

Two cases of Acute Arthritis of Infants. Mr. M. Baker. (*St. Bart.'s Hos. Reports*, 1880.)

Cases of Infantile Nervous Diseases. Dr. Gee. (*Ibid.*)

Acute Osteitis: Boy, aged 14 years: Septicæmia: Excision of Tibia: Recovery. Mr. Macnamara, Westminster Hospital. (*Brit. Med. Jour.*, April 2, 1881.)

Acute Osteitis: Pyæmia: Osteotomy: Death: Boy, aged 12 years. Mr. Mason, St. Thomas's Hospital. (*Ibid.*)

Hæmorrhagic Small-Pox: Recovery: Girl, aged 11 years: Unvaccinated. Dr. Gayton, Small-Pox Hospital, Homerton. (*Ibid.*, April 9.)

Gangrene of Left Leg in New-born Infant. Dr. Reed, Plymouth. (*Ibid.*, April 23.)

Passage of a Scarf-pin by a Child, 18 months old. Dr. Garner, Preston. (*Ibid.*)

Belladonna Poisoning: about four drachms of Extract Swallowed: Extreme Symptoms: Treatment by Emetics, Pilocarpine, Brandy: Rapid Recovery. Dr. Bond, University College Hospital. (*Ibid.*, April 23.)

Tetanus Neonatorum: aged 12 days: recovery. Dr. Welch. (*Ibid.*, April 30.)

Right Hemiplegia with Unilateral Anasarca of Trunk and Limbs and Hyperæsthesia: aged 5½ years: Post-Scarlatinal: Inequality of Temperature on two sides: Death: No *post-mortem* Examination. Dr. Treutler. (*Ibid.*, May 7.)

Strangulated Congenital Hernia: Operation: Recovery: aged 9 weeks. Mr. Cotterill, Royal Dispensary, Edinburgh. (*Ibid.*, May 21.)

Case of Croup, aged 4 years: Treated by passing Catheter into Trachea by the Mouth: Recovery. Dr. Paton, Rockferry. (*Ibid.*, May 21.)

Gangrene of Right Leg, Scrotum, and Penis: aged 3 weeks: fatal. Mr. Logan, Bristol. (*Ibid.*)

Case of Mumps followed by Meningitis and subsequently Orchitis: aged 16 years: Recovery. Mr. Hall, Lancaster. (*Ibid.*, June 18.)

Double Renal Calculi: Girl, aged 7 years: Death: Calices of both Kidneys distended with Calculi: Case simulating Congenital Heart Disease: Death: aged 2½ years: Heart healthy. Dr. Semple, North Eastern Hospital for Children. (*Med. Press and Cir.*, April 27.)

Sudden Dyspnœa: Cause unknown; Tracheotomy: Death: aged 19 months. Mr. Parker, East London Hospital for Children. (*Med. Times and Gaz.*, April 16, 1881.)

Scarlet Fever: Empyema: Aspiration: Recovery. Mr. Parker. (*Ibid.*)

Traumatic Cerebro-Spinal Meningitis: Death: aged 22 months. Mr. Parker. (*Ibid.*, April 23.)

Ectopian Vesicæ: Plastic Operation: Death: 5 weeks. Mr. Parker. (*Ibid.*, May 14.)

Calculus Vesicæ in girl aged 5 years: Extraction by Rapid Dilatation of Urethra. (*Ibid.*)

Scarlatinal Nephritis (?) Meningitis: Recovery. Dr. Barlow, London Hospital. (*Ibid.*, June 11.)

Severe cases of Pleurisy with Effusion in Children: Paracentesis: Quick Recoveries. Mr. Cæsar, Victoria Dock Dispensary. (*Lancet*, April 2.)

Vesical Calculus: Lateral Lithotomy: Subsequent Discharge of Pus from Umbilicus: Recovery. Mr. C. Puzey, Liverpool Northern Hospital. (*Ibid.*)

Bromide Eruption: aged 14 months. Dr. Cavafy, St. George's Hospital. (*Ibid.*, May 7.)

Rabies in a Deaf Mute: aged 6 years: Onset of Symptoms 5 months after Bite: Death. Mr. Taylor, New Zealand. (*Ibid.*, June 18.)

Lithotomy in a Child: aged 2 years 8 months: Calculus of Uric Acid and Phosphates as large as a chesnut: Recovery. Mr. Reckitt. (*Ibid.*, Jan. 4.)

CASES AND SPECIMENS OF CHILDREN'S DISEASES EXHIBITED AT SOCIETIES.

PATHOLOGICAL SOCIETY OF LONDON.—April 5, Dermoid Tumour of Soft Palate: aged 3 years: tumour two inches long, structure resembled skin, with hair and glands, fat and cartilage. Dr. Hale White.—April 19, Cirrhosis of Liver in boy aged 10 years: morning sickness, anorexia and epistaxis: no history of spirit drinking: no evidence of syphilis. Dr. S. Taylor.—May 3, Sarcoma of Kidney, aged 22 months: no other organ affected. Dr. Abercrombie. — Intussusception of Ileum into Colon: ulceration of cœcum: death from peritonitis. Dr. Turner. —Sarcoma of Capsule of Kidney: nearly filling abdomen: of two months' growth: fatal at 4 years.

CLINICAL SOCIETY.—April 8, 1881, Arterial Hæmatoma of right forearm in a boy aged 14 years, subsequent to rheumatic fever, and apparently due to embolic arteritis and perforation. Mr. Rushton Parker. Meningocele: 4½ months. Dr. Steavenson.

OPHTHALMOLOGICAL SOCIETY OF GREAT BRITAIN.—March 31, Orbital Tumour and Double Optic Neuritis: boy, aged 12 years. Mr. Streatfeild.—April 7, Disease in Region of Yellow Spot of both Eyes: aged 1 year. Mr. Waren Tay.

MANCHESTER MEDICAL SOCIETY.—April 26, Round-Celled Sarcoma of Thyroid Body; aged 9 years: 3 months' duration. Mr. Southam.—Tumour of Cerebellum, Tubercular: girl, aged 12 years. Dr. Mann.

ABERDEEN BRANCH OF BRITISH MEDICAL ASSOCIATION.—May 11, Case of Rupture of Tympanum, with Facial Paralysis: aged 7 years. Dr. M. Booth.

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3. *Turin on the Temperature of Tubercular Meningitis in Children.*—Dr. Turin, after referring to the want of accurate information concerning the temperature in tubercular meningitis, proceeds from an analysis of forty-one cases to the following conclusions. 1st. The disease is always accompanied by high temperature in the prodromal or one or two of the subsequent stages, but rarely throughout the whole course of the disease. 2nd. In a few cases the disease begins with a sudden elevation of temperature, like the onset of an acute disease. 3rd. The thermometric results are extremely variable, so that a typical curve cannot be drawn. 4th. In cases of pure tubercular meningitis, the temperature seldom rises above 39 deg. Cent. (102 deg. Fahr.), and mostly varies between 38 deg. and 39 deg., but may fall several degrees below normal. 5th. The most frequent type is remittent, with the usual daily fluctuations. The variations within twenty-four hours are normal or greater than normal, often of a very irregular character, more or less sudden, rises and falls in each stage and at different times of the day. 6th. When the meningitis is the sequence of some febrile affection, the temperature is higher than in other cases, but otherwise runs a similar course. 7th. In cases of acute miliary tuberculosis the febrile elevations are greater and more variable.

6. *Gowers on Paralytic Chorea.*—Five cases in children of ages varying from 7 to 14 years, three of whom were girls, formed the basis of a paper read by Dr. Gowers at last year's meeting of the British Medical Association. They illustrate that form of chorea in which the muscular weakness is the prominent symptom, the twitching, and incoordination of voluntary movement being slight. In regard to such cases, Dr. Gowers remarks, rarely slight clonic spasm occurs in the affected arm at first, and subsequently passes off. The loss of power may be very great, as it may be much less than the loss of use of the limb

would suggest. In these cases there is inaction rather than paralysis; usually one arm only is affected, and there is no paralysis of face, tongue, or leg. Both arms may be affected, but one is always the weaker. On careful watching, clonic twitching is to be observed, though often very slight. The course of such cases is tedious, but they have not been seen to pass into severe general chorea. The reported cases all recovered under the use of liq. strychniæ.

7. *Smith on Milk Indigestion in Young Children.*—Dr. Eustace Smith contributes to the *British Medical Journal* of June 4th, a very practical paper on indigestion in young children, associated with milk food. Though by far the most frequent in infants fed on cow's milk, it is not unknown in sucklings. The morbid condition is primarily due to some disturbance in the digestive organs, or some defect in the quality of the milk. In either case there takes place an acid fermentation of the milk, which either establishes or intensifies any existing gastric catarrh, the symptoms of which are frequently severe or even fatal. Not seldom a perfectly pure fresh milk, given in suitable quantities, and with all possible precautions to make it digestible, is found to disagree in the same way as undiluted cow's milk given in quantities too large or too frequent. In such cases the child begins very quickly to waste, and to show all the signs of defective nutrition. The general symptoms of the catarrh may be divided into three classes, according as to whether the prominent feature be diarrhœa, vomiting, or constipation. The rational treatment for such cases obviously consists in attempting to prevent the acid fermentation, by diluting the milk with barley-water or gelatine, so that the casein may be forced to coagulate in a multitude of little clots instead of in solid dense lumps; or to partially neutralise the gastric juice by lime-water. But in the very frequent cases where this fails, and the indigestion is evidently due to an inability to digest milk in any form, it becomes necessary to temporarily substitute some other aliment, and especially so when the milk has been supplemented with starchy or saccharine matters, themselves the cause of an acid fermentation. Dr. Smith recommends in such cases to replace the fermentable matter by weak veal or chicken broth in equal proportions; cream and whey, a dessert spoonful to 4 ounces; yolk of egg beaten up with whey or veal broth, and Mellin's food for infants dissolved in barley-water, or in equal parts of this and whey. In cases where the vomiting is severe, half-drop doses of liquor arsenicalis with a few grains of bicarbonate of soda in some aromatic water, is the best sedative, and it is usually desirable to commence with a full dose of castor-oil to remove the irritating substances. After a few days of such treatment, the power of digesting milk usually returns, but at first it should be given sparingly, freely diluted with barley-water, and only once or twice in the day.

8. *Smith on the Treatment of Pleurisy in Children.*—The treatment of pleurisy in children was the subject of a communication by Dr. Lewis Smith to the obstetric section of the New York Academy of Medicine, from which we abstract the following. During the stage preceding effusion, the application of one or two leeches may be beneficial, except when the disease is secondary to acute specific fevers. Poultices made very wet, of one part of mustard to 16 of linseed, and changed every twelve hours; or in infants, friction with camphorated oil, are most serviceable; blistering should not be employed. Half to one-drop doses of tincture of aconite may be given; or, preferably, one to two-drop doses of tincture of digitalis every three hours, and opium to relieve the pain and cough. During the stage of effusion, diuretics and tonics are beneficial. Infusion of digitalis with acetate of potash, is very serviceable. A relaxed condition of the bowels favours absorption of serous effusion, diaphoretics do not aid much in the removal of the fluid. Pilocarpin produces a depressing effect, and the propriety of using blisters in this stage is very doubtful. Dr. Smith formulates the indications for thoracentesis as follows. Oppressed breathing, due to effusion; a flat percussion note over the entire affected side, with displacement of the heart, even if there be no dyspnœa, for this may occur suddenly; no material decrease in the effusion after weeks of treatment; moderate effusion with disease of the opposite lung, or of the lung of the affected side; extension of the inflammation to the pericardium; the existence of cardiac valvular lesion; empyema. The operation should be performed in the eighth intercostal space, on a line perpendicular with the angle of the scapula. The cannula should be introduced to the depth of one inch, and the admission of air to the pleural cavity should be carefully avoided. Washing out the cavity is injurious rather than beneficial, except when the pus is offensive, the object being to empty the cavity and approximate the pleural surfaces. Dr. Smith thinks there will be a reaction against the removal of a portion of the ribs in cases of empyema.

10. *White on Infantile Eczema, and on Diseases of Children, at the Annual Meeting of the American Medical Association.*—Dr. White of Boston presented a paper entitled 'Some of the Causes of Infantile Eczema, and the importance of mechanical restraint in its treatment'. From an experience of 5,000 cases, of which 1,770 occurred in children of 10 years of age and under, and 569 of these in the first year of life, the author considered that the cause was ascertainable in but a very small proportion of the number, and that, as far as his experience went, eczema affected all classes of society alike, occurred at all seasons of the year, came in children of all degrees of health, in the perfectly sound as frequently as in the feeble; that it had no necessary connection with any other diseases of childhood; that it showed itself in an equal proportion in bottle babies and those reared at the breast, and was independent of diet, and that there was no more necessity for a supposed sympathy with, or dependence upon the state of the blood, or the condition of some other organ, when the skin is affected with eczema, than when the lung, kidney, etc., is affected. He further considered that a system of restraint by straight-jacket, to prevent scratching, was sufficient to cure this disease. Considerable dissent from these views was expressed in the discussion that followed by Dr. Bulkley of New York. Dr. Ulrich of Pennsylvania, who regarded the straight-jacket as a species of torture, considered that Dr. White laid far too great stress on local causes of eczema, and ignored entirely the influence of internal general dietary and hygienic causes, which, if not recognised and managed, results in the local treatment being imperfect and uncertain. Dr. Bulkley did not believe the subjects of infantile eczema were really in perfect health; and it was rare for the itching not to be relieved by an ointment of tar, oxide of zinc, and rose-water. W. H. ALLCHIN, M.B.

REVIEWS.

On Anchylosis, and the Treatment for the Removal of Deformity and the Restoration of Mobility in various Joints. By Bernard E. Brodhurst, F.R.C.S., Surgeon to the Royal Orthopædic Hospital. Fourth Edition, Revised and Enlarged, with Engravings. London: J. and A. Churchill. 1881.

The treatment of ankylosis by forcible flexion was advocated by Mr. Brodhurst twenty-four years ago; and he publishes a fourth edition of his work because he desires to confirm all that he has previously said upon the subject, and to express his increased confidence in this plan of operation.

Flexion of the stiff joint and not *extension* is the chief point urged by this author; and manual operation is advocated as being a far safer and more effectual mode of procedure than movement by means of mechanical apparatus.

In dealing with the *causes* of false ankylosis 'gonorrhœal rheumatism' is especially referred to; but, inasmuch as the author considers that this affection is not necessarily the result of gonorrhœa, the name is considered inappropriate; yet this species of ankylosis he states 'is an affection which is always preceded by urethral irritation and, for the most part, by a specific urethral discharge.'.....'No form of inflammation induces false ankylosis so frequently as this.'

As to *diagnosis*, Mr. Brodhurst strongly urges the value of anæsthetics; and, when examinations are made without their help, he advises gentleness in manipulation, because rough handling is likely to excite muscular action, which will more or less limit the movement of the joint. In this chapter (upon diagnosis) more, perhaps, might have been said upon the various indications of pain as a symptom of active disease, or of the presence of adhesions attached to sensitive parts.

The chief portion of the book is devoted to *treatment*, and this is doubtless that portion to which the author attaches most importance. Mr. Brodhurst is a great advocate for tenotomy, and he employs this means of treatment when dealing with fibrous ankylosis in which there are any 'rigid muscles'. He also divides cicatrices (subcutaneously) when they appear to interfere with the restoration of the joint to its proper sphere of action. 'It is better,' he says, 'to proceed at once to the subcutaneous section, rather than to prolong the treatment by extension unnecessarily; for unless the adhesions are recent, simple extension is seldom of itself, and uncombined with subcutaneous sections, sufficient to remove the contracted condition of a limb.' The limb is then to be well supported by an apparatus, and extension to be made slowly.

There are, however, many cases in which such treatment will not suffice to restore mobility to the joint; in which, in fact, the firm condition of the ankylosis contraindicates any attempt at gradual extension. It is then that forcible *flexion* is to be adopted. Great care is to be taken to discover the exact condition of the joint, so as to avoid any interference until active disease has entirely ceased. The determination of this period is a matter of great importance, and one which might, perhaps, have been enlarged upon. Some surgeons consider that several months ought to be allowed to elapse after active disease has ceased, before any attempts at reduction are made; and perhaps Mr. Brodhurst, in taking care that the disease had 'entirely ceased', would not operate sooner than other cautious surgeons; but this is not thoroughly expressed.

If the case is suitable for operation, the following conditions are, the author states, to be observed. 1. The patient must be completely under the influence of an anæsthetic. 2. Dense cicatrices, fasciæ, and tendons are to be subcutaneously divided, and the punctures allowed to heal before the limb is flexed. 3. Moderate force alone is to be used to rupture the adhesions. 4. *Flexion*, and not extension, is to be made. 5. After operation, the limb is to be retained fixed in the deformed position until all tenderness has ceased.

The bad results that have followed the operations of Louvrier, Dieffenbach, and others, have arisen, either from their using powerful instruments, or from their attempting reduction without dividing tendons, etc., or because they have employed *extension*.

Attention should be paid to Mr. Brodhurst's advice that *moderate* force alone be employed; and we would remark that this moderation is very important when the patient is young, because epiphyses have been separated from their shafts in young subjects, and, as a result, amputation has been rendered necessary.

Mr. Brodhurst appears to have met with extraordinary success in the cases in which he has employed forcible flexion in fibrous ankylosis, as he states that with over 1000 cases no bad results have occurred.

In the chapter devoted to the treatment of osseous ankylosis, the author describes the operation of section of the neck of the femur, a proceeding first instituted by Barton, of Philadelphia, but which 'scarcely became a well recognised operation until Mr. Adams especially drew attention to the subject'. The operations of Barton and of Adams, are, however, different in this important respect, that a large incision is made in Barton's operation, while that of Adams is strictly *subcutaneous*.

E. Noble Smith.

Syphilis et Mariage. Leçons professées à l'hôpital Saint-Louis. Par Alfred Fournier. Paris: Masson. 1880.

Syphilis and Marriage. By Alfred Fournier. Translated by Alfred Lingard, M.R.C.S., with prefatory remarks by Jonathan Hutchinson, F.R.C.S. London: David Bogue. 1881.

The important question of syphilis, in relation to marriage, has been discussed from time to time by various authors, notably by Diday and Langlebert; but never in anything like the complete and systematic manner in which it is dealt with by M. Fournier in these lectures which have now been carefully translated by Mr. Lingard.

The book is divided into two parts; the first relating to syphilis contracted before marriage; the second dealing with the consequences of the disease during married life. In the first part the dangers attending marriage at an early period of syphilis are strikingly set forth, and numerous examples are related to show the disastrous results that may ensue under such circumstances, both with reference to the wife and to the children, as well as directly and indirectly to the patient himself. On the other hand, the author strongly combats the view that syphilis *per se* forms a permanent obstacle to marriage; and

a large number of cases are quoted to prove that a man who has suffered from syphilis may, nevertheless, marry without infecting his wife, and become the father of perfectly healthy children, provided that certain conditions have been fulfilled before the marriage is contracted. These conditions are briefly as follows: 1. Absence of actual syphilitic symptoms. 2. Advanced age of the diathesis. 3. A sufficiently lengthened period of immunity after the last specific manifestations. 4. A non-menacing character of the diathesis. 5. A sufficiently prolonged course of specific treatment.

These several conditions are considered at length, and the author is of opinion that no syphilitic person ought to think of marriage under a minimum period of three or four years devoted unremittingly to treatment. M. Fournier's rule, however, when consulted on this subject by a patient whose syphilis dates back only three or four years, however regularly he may have been treated, is to advise further delay and further treatment, unless the patient urge serious reasons for immediate marriage, in which case, if he fulfil all the other conditions just mentioned, he may be allowed to contract marriage. With regard to this part of the subject many will probably agree with Mr. Hutchinson in his prefatory remarks, when he says that he is 'scarcely prepared to go the full length, which M. Fournier suggests, in the direction of caution and of prohibition'. A three or four years' course of treatment is certainly not usually considered necessary—at least in this country—in ordinary cases of syphilis; though, of course, in some instances, even a much longer period may be required. No one can doubt, however, that strict rules in respect of marriage are necessary; and few will feel inclined to blame the author for keeping on the safe side, more especially if the lamentable frequency with which marriage is entered into by persons totally unfit as regards their health be considered.

In the second part of the work, the various ways in which syphilis may affect husband, wife, and children are fully discussed. The most appropriate prophylactic measures are first pointed out. Full instructions are also given for the management of pregnant women, and of the offspring, when syphilis has already been propagated, as well as for the prevention of further spread of the taint to wet-nurses, and others who may be brought in contact with the diseased individuals. Further, the line of conduct which, in M. Fournier's opinion, ought to be followed by the physician, with regard to the delicate questions that may arise in connection with the introduction of syphilis into a family, is also indicated. A long list of cases and other evidence bearing upon the numerous important points discussed in the preceding pages, completes a work full of valuable information, and one which fills an important gap in the literature of syphilis. The questions so ably handled by M. Fournier in these lectures, must constantly arise in the practice of every medical man, and from the clear and practical manner in which the subject is treated, the book cannot fail to be of assistance to all who study it attentively.

Arthur Cooper.

Supplement to Ziemssen's Cyclopædia of the Practice of Medicine. Edited by George L. Peabody, M.D. London: Sampson Low, Marston, Searle, and Rivington. 1881.

When books reach the size of nine large volumes, it is no light matter, either for editor or for reader, to contemplate the possibility of any such necessity as a speedy issue of a second edition. Some such thought, with its attendant sympathy, must have inspired the effort expressed in the supplement to Ziemssen's Cyclopædia, now before us. Thus, at any rate, it appears to the reader, who can only view a book of this kind in the light of a novel attempt to obviate a contingency painful to contemplate, or as a well-meaning courtesy between doctors of different nationalities. Though it strikes one as somewhat strange that a supplement to a work of the stamp of Ziemssen's Cyclopædia should have been issued apparently uncontrolled in any way by the supervision of the originator, or even of the editor, so far as we can find, of the English translation of the already completed issue, this volume is not without points which are worthy of commendation. But as a work—of art, shall we call it?—it may be doubted whether it will do much towards sustaining the reputation of its compilers or its editor. A book that from its very nature must contain such a smattering, even though it be intended to crown an incomplete structure, must so abound with evidences of its own incompleteness, must prove so demonstrative of the incompleteness of the original, even if, as we readily allow, the omissions which require a supplement are no more than those dependent upon the march of the times, that it will probably disappoint more than it will gratify. We fear this will be the verdict upon this volume.

All through it a sense is imparted of competition upon unequal terms with medical journals, indices of diseases, medical records, and such like periodicals, and what is done satisfactorily in the one case is very unsatisfactory in the other, because the objects of periodical and stationary literature are, or should be, different. The weekly journals, records, etc., are the stomach of the profession, but cyclopædias, at any rate, should contain nothing which is not thoroughly digested and ready for complete assimilation. Now, we do not think that this view of the dignity of a ten volume cyclopædia is at all acted up to in a supplement which aims at nothing more than keeping the original up to date. It is impossible to keep such a book up to date if what is meant by so doing is to make it contain a record of all the latest observations upon all subjects; and the inevitable result of any such attempt is to produce a big bibliography with a number of disjointed observations, which could hardly ever be in any sense complete when we consider how numerous are the workers, and how rapidly observations follow one another upon all subjects, and are furnished to the crucible of medical opinion. In the book before us we have much bibliography, and should have had more, but that the editor wisely decided to omit some, having a preference for text, which is, at any rate, more appetising, if not always more digestible in the end. And we have a collection of articles, containing the observations of some, the cases of others, in what appears to be a somewhat heterogeneous mixture. But enough of this vein. We have no intention of doing more than suggesting that the task which the editor set himself to do is more than any one could hope to do to the satisfaction of a large number of his readers. The book itself contains, of course, much that is valuable, much that is interesting, much that will ensure it plenty of consultation. We can scarcely particularise, where the range of embrace is so wide and varied, and where some subjects, having made greater advance than others, necessarily claim more attention and more space. But it may be re-

marked that, to judge from the small amount of matter devoted to it, the liver has had its day, and that investigators in this direction have of late rested from their labours. We find only a few pages on the operation of cholecystotomy, and a page or two on hypertrophic cirrhosis. The latter section illustrates well the weak point of such a book—that, in endeavouring to give a summary of recent observations, it, with the original, soon grows old, as the observations of Hamilton and Dreschfeld find no mention, and, indeed, many others we could name. But there are many interesting articles on zymotic disease, diseases of the larynx, lungs, heart, nervous system, and kidneys, which will well repay perusal. Of the merits of these our readers must judge for themselves.

JAMES F. GOODHART, M.D.

The Harrogate Waters, etc. By G. OLIVER, M.D. 12mo., pp. 224. London: K. K. Lewis. 1881.

Guide to Trefriw. By J. W. HAYWARD, M.D. 3rd Edition, 12mo., pp. 77. Liverpool and London. 1881.

THE first book on our list gives a clear history of the varied resources of Harrogate. It commences with a notice of the climate, and goes on to examine fully the different springs and their mineral constituents; it concludes with a well considered account of the therapeutic action of the waters.

Dr. Oliver also enters on a wider field, and compares the Harrogate waters with similar continental ones, following the good example shewn by Mr. Prestwich a few years ago in his examination of the mineral water discovered at St. Clement's, Oxford. Works like the present one, and that of Dr. Spender on Bath, will help much to raise the character of the literature of English Balneology. Having expressed this opinion of the value of Dr. Oliver's work, we proceed to offer a few criticisms on it.

It is only natural that the writer should perhaps overpraise the virtues of the climate and the waters of his own station. This is a defect almost inseparable from works of the class, but Dr. Oliver does not sin much in this respect. He is not satisfied with the very potent contents of his wells—salt, sulphur, and iron, as explaining the efficacy of Harrogate treatment, but is much inclined, as many writers at present are, to go in search of minute quantities of other substances—which have of late been discovered in the waters. For instance, he seems to regard small doses of Barium, which are only taken in conjunction with a large quantity of other salts, as distinctly modifying the action of the waters. He and Dr. Thorpe boast that no springs in this country or on the Continent contain so much of that 'potent agent' Barium. It does not seem to us to be a therapeutic question of much importance how much Barium the Harrogate waters contain; but we observe that the Grub Quelle of Recklinghausen in Germany contains 0.564 of Barium, calculated to correspond to 0.763 of Carbonate of Barium, in the 10,000 parts, which is probably quite as strong as anything at Harrogate.

Then, again, one of the Harrogate wells is declared to contain as much of Iodine-Bromic contents as the well at Challes. This is true in a general way—but on looking at Dr. Oliver's table, we find that as to the more active agent, Iodine, the Challes well contains about ten times as much as the Harrogate one. Dr. Oliver admits that the name of Kissingen given to one of the Harrogate springs is inappropriate. We wish that he had not repeated, over and over again, the misprint of 'Kissengen'; we could enumerate a good many similar misprints, as 'Baden (Swetz) Malkt-Bruomen,' 'Leibig,' etc. One misprint of the title of an old-English work on Harrogate is repeated twice, Spandarine for Spadacrene.

We should have been glad if Dr. Oliver had said a little more about the addition of Carbonic Acid to some of the Harrogate waters. There is at present quite a fashion in this matter, which may be carried too far; but, undoubtedly, disagreeable waters like those of Harrogate may be rendered more palatable by the addition of that gas. We learn that in Norway they have been making sea-water a not unpleasant drink for scrofulous children. It also appears, from a German journal, that the waters of Llandrindod, bottled and charged with Carbonic Acid by their spirited proprietor, now figure in the Frankfort Exhibition.

Dr. Oliver concludes with something of a sneer at the muddy mine-washes which have been dignified as mineral waters, alluding, we presume, to the water treated of in the second work of our heading.

In that work the most is made of Trefriw, of its natural scenery in a picturesque part of Wales, of its climate, of its fishing, and open air life.

The spring, issuing from old mines, is a very powerful alumino-chalybeate—indeed, there are two, a weaker and a stronger; but even the weaker one is so strong as to be poisonous in large doses. It is declared that the water is quite clear and colourless when it issues, although it soon decomposes. It is a water which would be much better drank diluted, than in tea-spoonful doses; but, unfortunately, the addition of water makes it muddy. Still, if used with care, a certain quantity of iron may be thus introduced into the system. But this class of very strong waters, like the abandoned well at Sandrock in the Isle of Wight, does not supply a convenient mode of administering iron.

J. MACPHERSON, M.D.

On Heart-Starvation. By J. MILNER FOTHERGILL, M.D. (Reprinted from the *Edin. Med. Jour.* 1881.)

WE cannot approve of the tone which pervades this *brochure* of Dr. Fothergill's. It would be a retrograde step if medical writers were to fall into the style which seems to commend itself to this prolific author. We strongly object to these sensational titles, and to the attempt to dress up well known clinical facts in strange and startling phraseology. Apart from the language in which they are disguised, there is not a fact mentioned in this essay which is not also a common-place to every experienced practitioner. And Dr. Fothergill must be aware that it is not usual, nor is it commendable, to publish such statements as the following. 'The Rev. M. S. had for seven preceding months been under the care of one of the most eminent members of the profession in town, without avail. . . . . So far he has made a most marvellous recovery since he has been under your (Dr. Fothergill's) treatment!'

Again, we are told that a 'Mr. A. consulted the late Dr. Murchison some three years ago, who then said there was nothing organically wrong with the heart'; but to Dr. Fothergill, 'the case seemed one of failure, from fatty degeneration of the heart-walls'; and we are further informed that 'the eminent medical men, under whom he had been before placing himself under my care, "lacked decision" in their measures'.

I. BURNEY YEO, M.D.

Refraction of the Eye. By A. Stamford Morton, M.B., etc. London: H. K. Lewis. 1881.

This little book is well arranged, and bids fair to answer the purpose for which it is intended. As is seen by the preface, the author does not claim to add to the subject anything new. His object, which on the whole he fairly attains, is to put in a clear and precise manner the most modern methods of treating errors of refraction. The chapters on 'Keratoscopy' and on the formation of images, are really good, and constitute the most valuable portion of the work. W. A. Brailey, M.D.

The Detection of Colour-Blindness and Imperfect Eyesight; with Tables, etc. Arranged by Chas. Roberts, F.R.C.S. London: David Bogue.

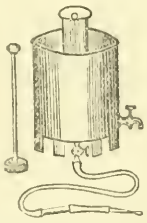
This little book gives much information in a small compass. It has, however, the imperfection attaining to its convenient size, for the methods and tables given are not very full. Dr. Daae's wools are correctly given, though for practical purposes it would be better for the Anthropometric Committee of the British Association for the Advancement of Science, for whom these tables are arranged, that their examiners should supplement, if not supersede, them by the wools of Holmgren. The method of using these is described.

As concerns the determination of the quality of the eyesight, by the test and directions given, we fear that many cases will be returned under the ambiguous and imperfectly explained heads of amblyopia and amaurosis. Indeed, the diagnosis of very many cases could not be made by their use. But, as far as it goes, the information given is correct and useful. W. A. Brailey, M.D.

NEW INVENTIONS.

DR. WHITESIDE HIME'S TRANSFUSER.

The apparatus figured below is one of Dr. Hime's



own device, and he believes that it offers many advantages. It is made of tin, except the inner receptacle for the blood, which is silver-plated. This inner receptacle is surrounded by warm water, to maintain the temperature of the blood; and a thermometer fixed to it enables the temperature of the water to be ascertained. It is essential that the blood be of a proper temperature for the injection. A tap in the side enables the water to be drawn off, and one in the bottom lets the blood flow through the elastic tube. A short piece of glass tube inserted into the elastic tube enables the operator to see if the blood is flowing. By raising or lowering the apparatus, the pressure, and consequently the rate of flow of the blood, can be increased, or lessened, or stopped; and, should a block occur, the piston can be employed to clear out the tube, or even, if need be, to gently force the blood into the vein. This is rarely necessary or advisable, gravity being usually sufficient to overcome such obstacles as prevent the flow of the blood. The outer receptacle of the apparatus being filled with water at about 100 deg. Fahr., the blood is to be drawn, whipped, and poured into the inner receptacle, the bottom tap having previously been closed. The vein of the patient having been laid bare, a double ligature is to be passed underneath it, and cut in two. With one of the ligatures thus placed in position, the vein is tied, to prevent escape of blood when the vein is opened for the introduction of the nozzle of the transfuser. With the other ligature the nozzle is secured after its introduction into the vein, by which means all escape of blood backwards is prevented. The patient need lose little more blood throughout than what escapes when the skin is divided. The bottom tap is then to be turned, and the blood allowed to flow; the elastic tube being held between the finger and thumb near the nozzle. When the whole tube is full of blood (so as to prevent air contained in the tube escaping into the vein), the nozzle is to be inserted into the vein, and tied into it by the gut or silk ligature previously passed under the vein. While the ligature is being applied, the elastic tube is to kept squeezed by the fingers and thumb. The transfuser is then to be raised from four to six inches, the pressure taken off the tube, and the blood allowed to run into the vein. The finger and thumb being kept on the elastic tube between the nozzle and the glass tube will enable the current to be instantly stopped, should an air-bubble, or clot, etc., be observed in the glass tube. Should such an accident occur, the nozzle must then be withdrawn; the air-bubbles, etc., be allowed to escape; and the nozzle be then reintroduced. Anyone can use this apparatus; and, as there is nothing to get out of order, it is always ready for use. It can be made for a few shillings.* The metallic part measures seven inches in height and five in diameter.

LAW'S IMPROVED STEEL-WIRE STYLETS

Messrs. Samuel Law and Sons, of Cleckheaton, have forwarded to us samples of their patented Tinned Steel Wire. Its great strength and wonderful elasticity give to it great advantages over all other kinds of wire for the manufacture of stilettoes of every kind. We have seen a few made for the hollow needles of subcutaneous syringes; a trial of these is conclusive of their superiority over other kinds of metal. When the hollow needle has been partially closed, either with rust, or, say, a crystallised alkaloid salt, or dirt, the stilettoes are so strong and elastic that they can easily clear away every obstruction, and thus prevent the trouble of sending them to the surgical instrument maker to repair so often as hitherto. Messrs. Law and Sons supply either stilettoes, or a sufficient quantity of the wire to make them from, to last a life-time, with even less than ordinary care, for the hypodermic needles, at extremely reasonable terms. They keep in stock every other gauge or thickness of the wire, to suit any other purpose, such as stilettoes for catheters, etc.

* The nozzle in use is the same as that employed by Dr. R. M'Donnell, F.R.S., of Dublin. Dr. M'Donnell has described his apparatus and some cases in the *Dublin Quarterly Journal of Medical Science*, November 1870.

AN INSTRUMENT USED IN A NEW METHOD OF TREATING NASO-PHARYNGEAL AND LARYNGEAL TUMOURS.

Dr. C. R. Upson, Surgeon to the Department of Nose, Throat, and Lung Diseases, Atlanta Hospital, Atlanta, Georgia, writes in the *New York Medical Record*, p. 557, as follows.

'I think it is generally conceded by laryngologists, that none of the methods of treating naso-pharyngeal tumours hitherto suggested can claim to have been to any considerable extent successful. The forceps, the *écraseur*, the ligature, electrolysis, and the cautery, have each, in its turn, been recommended and tried for the removal of these growths; yet sooner or later they are found to recur, and while it does not surprise the surgeon, it renders the patient timid about submitting to a second operation which is liable to be attended with like results. Some months since, a new method of treating naso-pharyngeal growths suggested itself to my mind, *i.e.*, by hypodermic injections of various substances—the same, in fact, as has long been practised by myself and others for the destruction of nasal polypi.

'For this purpose I devised the instrument represented in the accompanying drawing, which in my hands has given the highest satisfaction.

'It consists of an ordinary hypodermic syringe, provided with a long hollow needle, which is passed through a silver cannula properly curved at its extremity. The outer surface of the needle, for a short distance from its attachment to the syringe, has cut upon its surface a screw-thread, which is fitted with a traverse-nut, to regulate the depth of puncture of the growth. Two shanks, with finger-rests at one end, are passed through rings on the side of the syringe, and attached at their other extremity, by means of set-screws, to the cannula, to enable the surgeon to operate the instrument with one hand. The flat wings at the end of the syringe serve as thumb-rests. The tip of the cannula is made to unscrew, and in its place can be fitted the fine spray-jet which accompanies the instrument.

'With this jet, applications of any desired medicament can be made either to the pharynx or larynx.

'The *modus operandi* of my instrument is briefly described. First charge the syringe with the desired quantity of the solution to be injected—I generally prefer acetic acid, gtt. x—xv; then place the patient in a good light, either direct or reflected; draw forward and depress the tongue with a proper instrument, which may be intrusted to the patient to hold, or the tip of the tongue may be covered with a napkin, drawn forward, and held out of the way by the patient. After cautioning the patient to breathe quietly through the nose, introduce the rhinoscopic mirror below and a little back of the palate, and as soon as you secure a good image in the mirror of the growth, introduce the cannula with the free hand; project the needle the desired depth into the growth, move the thumb back from its rest to the piston, and slowly inject the contents of the syringe into the tumour.

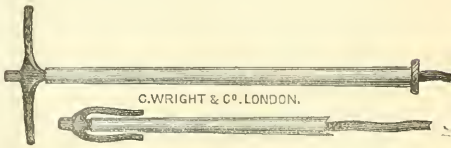
'The syringe was made for me by Messrs. Geo. Tiemann and Co., of New York.

'Since its receipt, several months since, I have used it in three cases of naso-pharyngeal tumour, and in each case with satisfactory results, *i.e.*, the destruction of the growth. Of course I cannot at the present time say positively that the tumour will not recur; but, judging from the success which has almost invariably attended the same operation in the case of nasal polypi, it is not at all unreasonable to expect like results from its use in naso-pharyngeal growths. At any rate, there is much in the simplicity of the operations to commend it to the laryngologist, especially as we may at least feel assured of as satisfactory results from its use as from any other operation. The instrument is also designed to be used for the removal of interlaryngeal growths, and lastly, it will be found useful as a pharyngeal and laryngeal aspirator.'

DAVY'S INDIA-RUBBER DRAINAGE-ANCHORS FOR THE TREATMENT OF ABSCESS.

Mr. Richard Davy, Surgeon to the Westminster Hospital, who formerly invented some retentive drainage-wires and a hastate knife for the treatment of abscesses, states that these drainage-anchors now under consideration are but modified drainage-wires. Experience proves that the projecting wire causes some inconvenience to patients, by reason of its non-flexibility, and by its catching in the dress, or causing pain on inadvertent motion. All the benefits of the wire, and none of its inconveniences, are secured by the use of India-rubber anchors.

The diagrams show well the India-rubber anchor expanded, and the wings depressed by the sides of the silver introducing cylinder. The whole of the appliances may be bought at Messrs. Wright and Co.'s, 108, New Bond Street, W.



Any abscess-sac may be laid open by the hastate knife, and the anchor immediately introduced inside the silver cannula; directly the wings reach the sac they expand, and the cannula withdraws itself from the India-rubber shank, leaving the anchor dropped, removable or not at the surgeon's discretion. The wings must be clipped proportionately to the size of the abscess-sac.

The pliability of the rubber shank gives no trouble; the pus drains by its side freely; and Mr. Davy writes, in the *British Medical Journal*, 'I am sure that in my own practice no mishap has ever occurred through its use. I have seen many hundreds of these anchors in abscess-cavities—in the face, neck, and other exposed quarters; the cicatrix that results is almost unnoticeable. Repeatedly have these anchors lain at rest, acting as drainage agents, for one, ten, to twenty-one days; a quick pull of the

surgeon's hand on the shank, with a finger on either side of the wound, as counter-resistants, will weigh the anchor, and allow the wound to readily close.'

AN IMPROVED EAR-SPOUT.

The annexed cut represents the common ear-spout, both as sold by the instrument dealers and as improved by me. As ordinarily made, its *raison d'être* is difficult to discover, for it does not in the least obviate the use of the basin unless the patient wears a rubber suit.

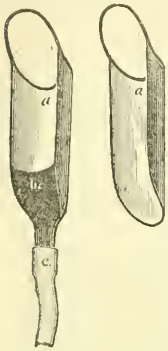


Fig. 2. Fig. 1.

The basin has the disadvantage of often being in the way of the syringe, and, as usually made, unless it is held steadily and in a horizontal plane, its contents are apt to be spilled.

By adding to the common spout (Fig. 1) a shield in front, and having a tin tube and the necessary length of rubber tubing attached to its lower extremity, we have an instrument (Fig. 2) by which the ear can be syringed without danger of wetting the clothes. The patient holds it readily to the ear, and the rubber tubing conducts the water to a receptacle placed in any convenient position.

This instrument can be obtained of Messrs. Leach and Greene, 1, Hamilton Place, Boston, U.S.

NEW CLINICAL THERMOMETER.

Messrs. Mayer and Meltzer show, at the International Medical and Sanitary Exhibition, an entirely new form of clinical thermometer; which is about the size and shape of one of the small watches now so much used by ladies. The accompanying illustration gives a good idea of the size and appearance. With the exception of the watch-glass which covers the dial, the instrument is entirely constructed of metal, and is therefore named the 'patent unbreakable metal clinical thermometer'. When it is to be used for taking the temperature of the axilla, it is convenient to screw the long handle through the ring of the instrument; by giving a half turn to the ring, the needle is stopped at any point, as in a stop-watch; it is also sufficiently delicate to be used as a surface-thermometer, and its accuracy is guaranteed. The scale on the dial of the instrument shown is unnecessarily extensive for clinical purposes; but this can be easily rectified in future models, the bulk also will probably be reduced in future. The instrument is patented in England, France, and Germany.

SLATER'S PATENT DISINFECTANT HOSPITAL BLANKETS.

Hospital managers, sick-nurses, and householders, who may have the misfortune, as most people have in the course of their career, to have charge of cases of infectious disease, will be interested to hear of the new form of disinfectant hospital blanket, which has been introduced by Messrs. H. and L. Slater, of Manchester. These blankets are not only convenient for hospital use, but specially for household use, where it is desired and is most important to secure thorough disinfection, and to employ agents which are likely to limit contagion. The new blanket is cheap, light, and durable. It is reported upon favourably by experienced nurses, as well as by medical men of skill and special knowledge in sanitary matters, amongst whom are Dr. R. T. B. Taaffe and Mr. Joseph J. Pope.

MEDICAL AND SANITARY EXHIBITION AT SOUTH KENSINGTON.

CONCLUDING NOTICES.

As our space last month did not admit of our noticing many excellent exhibits at this useful exhibition, we continue our critical remarks in the hope of their being useful to our subscribers as a permanent reference for surgical and medical necessaries.

Amongst the appliances in surgical belts, abdominal supporters, elastic stockings, etc., the exhibits of Mr. Bourjeaurd, Davies Street, W., deserve especial mention. Instead of being woven in one piece in the ordinary manner, Mr. Bourjeaurd has his appliances made in strips or ribbons, of different widths, which are afterwards very securely and beautifully sewn together. The object attained by this arrangement is that if a greater pressure is required against any particular part of the limb or body, a portion of the stocking or belt is taken out and another piece of less elasticity is put in, in its stead. Thus, the amount of pressure is from time to time regulated with the greatest nicety, an advantage not to be over-estimated. In female hernia it is well known the band worn by the patient often gets displaced. To obviate this, Mr. Bourjeaurd provides an air-pad with a minute tap and tube attached, and by the assistance of a common inflater, air is forced into the pad, and can, of course, be regulated as to quantity, the pad giving ease to the wearer and assisting to keep the band in place. A similar arrangement is carried out in the belts for displacement of the womb; and he provides a riding-belt, very light but strongly woven, of the same character. His suspensory bandages are also of an improved construction, very light, and made to button on the shirt, while retaining the usual band. He is also making an improved urinal, so constructed that escape or leakage is impossible in whatever position the wearer may happen to be. The Elastic Stockings, Belts, etc., made on the principles here named, are beautiful appliances, and are sure to be appreciated by the profession.

In Dental Appliances the collection was extensive and good, and in this department the exhibits of Messrs. Ash and Sons, and the Dental Manufacturing Company, Broad Street, Golden Square, showed to advantage. Air and Water-Beds, Cushions, etc., of the most approved construction, were well represented, and amongst the newest houses connected with this branch we may mention the exhibits of Messrs. Pocock Brothers, Southwark Bridge Road, as deserving attention, independently of those we illustrated in our pamphlet. We have entered so fully into the various pharmaceutical pre-

parations in the exhibition pamphlet, that little remains for our pen, except to mention a few other exhibits of interest that were unfortunately shut out of that publication, through their not reaching us in time.

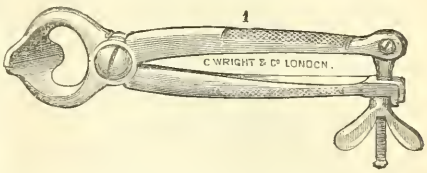
Messrs. Lehmann, Red Cross Street, E.C., the British agent for Cœth's Improved Milk Food, prepared at Montreux, Switzerland, by the Swiss Milk and Food Company, showed their popular preparations, which are entirely free from starch, and possess all the elements of pure Swiss milk. For table use, diluted with water, this milk is one of the best of the condensed order to be obtained, and it is equally well adapted for culinary purposes. Another preparation, shown by Mr. Lehmann, of the same company's manufacture, is an article called 'Zea', for which great advantages are claimed. It is asserted to be composed of sundry nutritive elements, is agreeable to the taste, low in price, and amongst other uses will make a palatable soup in a very short time, and can also be used for puddings, sauces, gravies, in conjunction with Liebig and similar preparations. Its low price will no doubt materially assist it in becoming popular with a class to whom many of the preparations of the day are practically prohibited by their price.

Another preparation of Malt exhibited is that of the Maltine Manufacturing Company (Limited), of Great Russell Street, Bloomsbury, which differs from others in the market, in so far that it is prepared from the three cereals, of barley, wheat, and oats. It is of American invention, and judging from the reports that reach us, is very carefully manufactured, the works and laboratories occupying a large space on the Hudson river. Professor Attfield says 'that it is far richer, not only in the directly nutritious materials, but in the farina-digesting diastase, than ordinary malt extracts'. He also says, 'that in comparison with the alcoholic malt extracts, it is about ten times as valuable as a flesh former, from five to ten times as valuable as a heat producer, and at least five times as valuable as a starch digesting agent. It contains unimpaired and in a highly concentrated form, the whole of the valuable materials which it is possible to extract from either malted wheat, malted oats, or malted barley'. Numerous English physicians and surgeons also testify to its invigorating and health-restoring properties. It is made up in a variety of different ways, in connection amongst others with cod-liver oil and pancreatine, the latter being in sufficient quantity to digest the oil.

Messrs. Southall Bros. and Barclay, of Birmingham, exhibit, amongst other articles, samples of the original collection of specimens of the organic materia medica of the British pharmacopœia for the use of medical and pharmaceutical students. These collections, done up in neat wooden boxes, are sold at a very moderate price, and consist of carefully-selected and characteristic specimens of the roots, barks, flowers, fruits, leaves, resins, gums, etc., of the British pharmacopœia. Each specimen bears a label, containing a description of the source from which the article is derived, its natural order, characters and tests, dose, and the names of the pharmacopœial preparations into the composition of which it enters. The student is thus enabled to study the materia medica with the actual substance, as well as the descriptive text, before him, an advantage to which a large number have heretofore borne testimony.

Mr. J. S. Haywood, Castle Gate, Nottingham, exhibits a collection of his specialities in the form of elastic stockings, bandages, suspenders, chest expanding braces, and small waterproof goods for the nursery, etc. Amongst these may be mentioned his elastic abdominal supporting belts, for weakness, pendulous abdomen, umbilical and inguinal hernia, well made, and giving perfect elasticity at the points required. The stockings, knee caps, etc., appear to be well-made appliances, and the braces can be readily made or adapted to any particular defect in the system that requires support, or the arresting of a growing evil. Mr. Haywood's productions, generally speaking, are well worth the notice of the profession.

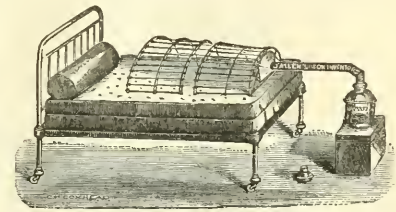
Messrs. C. Wright and Co., Surgical Instrument Makers, New Bond Street, show a good assortment of general instruments, including Benham's Clamp, as used for the treatment of hæmorrhoids by crushing, which we illustrate. Without enumerating the many other advantages to be gained by the use of this clamp, it may be



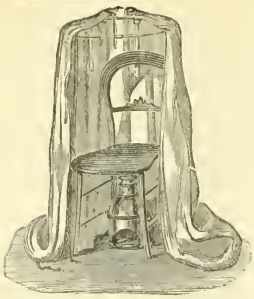
pointed out that it so completely crushes the pile as to leave only a slight fringed remnant, without any pain or bleeding, rendering the convalescence of the patient a matter of a few hours. Another article of interest shown by the firm is Benham's Steam Antiseptic Spray Producer, of which they are also the sole manufacturers. Our illustra-

tion represents the apparatus, which is composed wholly of metal, and is provided with an excellent safety valve and glass gauge for ascertaining the contents of boiler; the handle is also of a very convenient form, and can be held for a considerable time without tiring the hand. The apparatus is constructed to produce an uninterrupted spray for upwards of an hour, and, being inexpensive and portable, is well adapted for operating and dressing for hospital or private practice.

Messrs. James Allen and Son, Marylebone Lane, the well-known makers of Medical Baths, and numerous appliances for the invalid and sick room of metallic substances, exhibit several of their specialities in this direction, the principal of which is their Portable Turkish Hot Air and Vapour Bath, of which we append two illustrations, showing its application in two forms. It is claimed to be

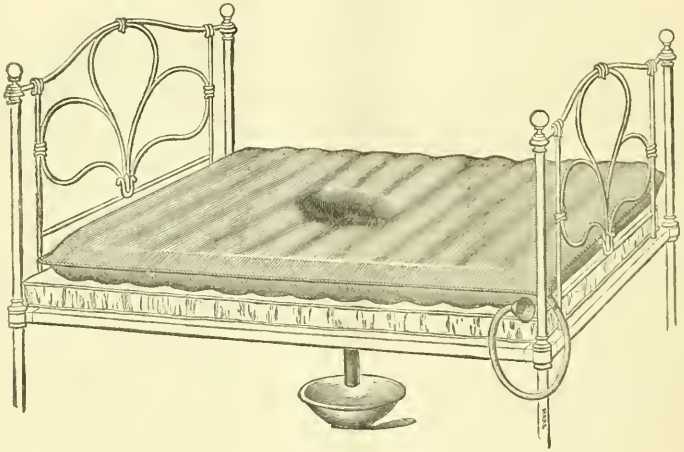


capable of generating a larger amount of heated air and vapour than any other portable apparatus. A bath of either, or the two combined, can be obtained in a few minutes, and may be taken from 15 to 40 minutes at a cost



of about threepence. The second illustration shows its application attached to the under part of a chair, with cloak, tinned iron supports, etc.

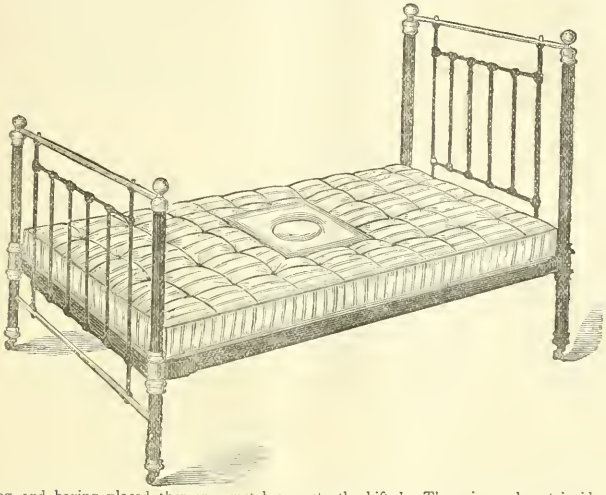
Messrs. Hooper and Co, Pall Mall, have an interesting collection of their celebrated Elastic Water or Air Mattresses, Cushions, etc. for Invalids, to be used on an ordinary bedstead or couch. One of the most important of these is their Elastic Central Tube Water or Air Mattress, specially constructed for conveying away the evacuations in cases of paralysis, disease of the spine, accidents, debility, old age, etc., of which the accompanying drawing will enable the reader to form a good idea. The advantages this bed offers can scarcely be over estimated, and it has received high commendations from a large body of the profession. Their Lever Invalid Bed-Lift or Elevating Bed and Elastic Water Mattress, affording a ready means of raising an invalid, is an equally meritorious invention. Provision is made for the use of the bed-pan (the lift on which the patient rests having a suitable opening for the purpose); for ablutions; for elevating the back and head; for ventilation and adjustment of the bedding, etc. The principle of this elevating bed being the simple lever without pulleys, cranks, or wheels, the invalid is raised, and again replaced, with great facility. Much pain and exhaustion are thus spared to the invalid, and the attendant's labour is materially lightened. Air and Water Cushions, and articles of a kindred character, make up the remains of this interesting exhibit. Messrs. Hooper have had the honor of supplying Her Majesty, their Royal Highnesses the Prince and

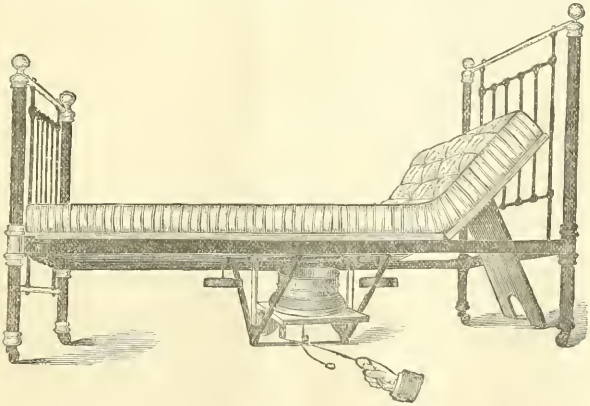


Princess of Wales, and the principal Courts of Europe, with these Appliances. The firm also exhibit Seltzer Water as originally introduced by the late Mr. Hooper.

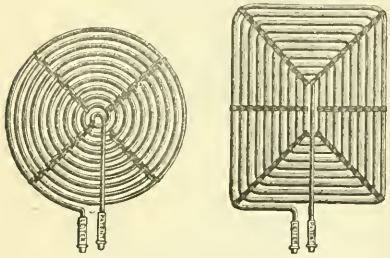
Messrs. Tapling and Co., Gresham Street, exhibit an Invalid Bedstead (Dalton's patent), the special appliance of which can be adapted to any bedstead, either in hospital or private houses, by simply removing the laths. The object of the patent, a self-adjusting invalid bedstead, is to enable the nurse, by simply pulling a ring attached to a cord, to lower a hair-stuffed plug, shown on the accompanying drawing, and having placed thereon a metal or earthen pan of the same shape, it is allowed to ascend by an arrangement of balance weights of the most simple character, and this pan fits exactly into the opening. The second illustration shows this arrangement. When the patient has used this appliance it is lowered by the same means, removed, and the hair-stuffed plug raised in its place, and the bed again made complete. The patient is thus enable to remain perfectly still, and is spared the pain and inconvenience attending the slightest change of posture. A headlift is fitted to and both ends are attached to the centre by hinges. Not only can the appliance be adapted to either side of a bedstead, but by turning both ends on the centre it becomes portable for transmission. The appliance, as a whole, is well worthy of attention.

Mr. T. W. Stidolph, High Street, Dartford, sends samples of his Improved Institution Bedstead, with Indestructible Cloth Sacking. The principal feature in these bedsteads is that the sacking is endless, and may be constantly shifted. The noise and rust incident to iron laths, and the fretting and wear of mattresses on the same, are by this arrangement entirely avoided, and the tension can be always kept to the extreme point, thereby giving it almost the advantage of a spring mattress. For examination, and for cleansing when soiled, the sacking can be instantly released and removed with the same facility as a round towel, while the open frame promotes cleanliness, which bedsteads with open joints and dovetail joints and laths do not possess to the same extent.



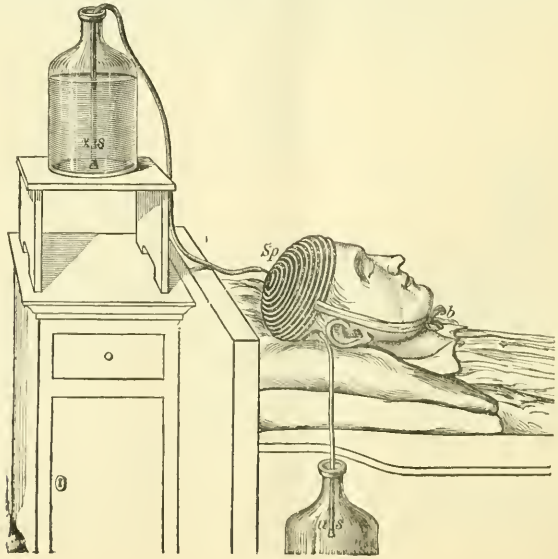


Messrs. Krohne and Sesemann of Duke Street, Manchester Square, are also well represented by Surgical and Orthopædic Instruments and Appliances, but the greatest novelty in the last-named department is a collection of Leiter's Pliable Metal Temperature Regulators, a new apparatus for continuous application of warmth or cold to different parts of the human body, and a new glass irrigator for wounds, artificial feeding, washing out, and injecting the stomach, etc. It would require more space than we have at our command here to do full justice to this invention, which has, we believe, been patented in most civilised countries. Passing over the old and ordinary methods of applying heat or cold to local parts of the body, we come to the method of constant water circulation employed by Richardson, Thornton, Esmarch, and others, with India-rubber appliances, which have largely taken the place of ice-bags, and more primitive methods. To Leiter, however, belongs the merit of having produced, by the employment of pliable metal tubing, a temperature regulator which will fulfil the requirements of the surgeon and physician for local application of warmth or cold in a constant and easily-regulated manner. The advantages of the new material



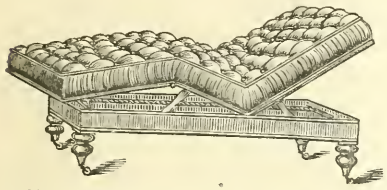
over India-rubber will be seen at a glance, for, being a bad conductor, the circulation of a large quantity of iced water is required to produce a reduction of temperature of the part to which it is applied. Numerous other objections, well-known to the profession, are attendant upon the use of India-rubber, all of which are obviated by the use of the pliable metal tubing. This invention consists in coiling and forming into various shapes, composition metal tubing having an inside diameter of from a sixteenth to an eighth of an inch, as in the subjoined sketches, which show two of the simplest forms; but they can be easily and rapidly made of any size, and the metal being so ductile, they are bent to the required shape by the merest pressure. They are provided with an inlet and outlet pipe, and the mode of application is shown in the next engraving, the flow of water in the first place being started by siphonage. When the upper or supply bottle is nearly empty they can be reversed, and the flow of water continued for the required time by constantly carrying on this plan. For hot-water application the arrangements are the same, with the addition of a little lamp with a circular wick, burning methylated spirit or petroleum. Above this is a little boiler having a spiral coil inside through which the water circulates, and becomes heated before descending to the metal pad on the patient. A thermometer is affixed in a vertical position by the side of the lamp, and the tube leading to the pad is carried down it, the temperature can thus always be seen at a glance. Leiter's glass irrigator is a funnel-shaped vessel of glass, having a long tube connected with its lower part, on the end of which is fitted a vulcanite plug. The advantages claimed for it are, that it can be kept cleaner than those made of tin, zinc, or other metals, while, on account of its funnel-form, a greater and more uniform hydraulic pressure is obtained than with irrigators of cylindrical or other shapes. Messrs Krohne and Sesemann's catalogue contains a number of illustrated examples showing how the irrigator, and the metallic temperature regulators can be utilised.

Mr. T. McIlroy, Charlotte Street, Fitzroy Square, exhibits his *post-mortem* or Anatomical Weighing Table, which, fitted with a complete weighing machine enclosed underneath, gives the weight of the body or any part thereof, from ¼ ounce to 600 pounds. It will raise and revolve at any given height, carry off fluids, etc., and drainage and downward ventilation are well provided for. There is also



an Examining Chair of ingenious construction, with almost every conceivable movement required for such an apparatus; an Operating Table of similar construction as regards its various movements; and an Operating Chair for fistula, invented by Bozeman of New York.

Mr. Wm. Hamilton, Ship Street, Brighton, shows an Invalid Couch called the Grasshopper, which we illustrate,



capable of being moved into any required position. It is also made with movable arms and post-rest.

Messrs. R. W. Winfield and Co., Cambridge Street, Birmingham, and Holborn Viaduct, the eminent Brass Bedstead Manufacturers and General Brass Founders, exhibit several Appliances for the Ward and Sick Room, Lamps, Gas Fittings, etc. A very useful article consists of a 'Kettle Bracket', which combines a light with a burner for boiling, etc., and by the peculiar arrangement of the kettle and pan sold with it, enables the food to be most delicately cooked, and without any odour. There are some Improved Patent Lamps for burning paraffin oil and other volatile oils, well worthy of attention, intended always to keep a full supply of oil to the wick, whatever the quantity in the reservoir may be. At the upper part of the body is a horizontal division dividing it into two unequal parts, the upper part constituting the wick dipping cup or vessel, and the lower and larger part the oil storage reservoir of the lamp. At one side of the divided body of the lamp is a hollow cylinder or barrel, in which a cup-shaped piston or lifter works freely. The upper part of the barrel projects into the wick dipping cup, its open top being a little below the level of the top of the dipping cup. In the wick dipping cup are overflow pipes opening into the storage reservoir. In the barrel, and a little above the bottom of the storage reservoir, is a series of perforations, through which the oil from the reservoir flows into the barrel, the oil in the reservoir and barrel being thereby maintained at the same level. The cup-shaped piston or lifter is raised or lowered in the barrel by means of an endless chain, which can be actuated outside the lamp, and the arrangements, broadly speaking, are somewhat on the principle of the moderator lamp. There are a variety of Patent Ventilating Lamps for Gas, and several examples of Gasaliers, Brackets, etc., of very choice design. The firm also exhibit a variety of Decorated Copper Panels to be used in building construction, suitable both for domestic and hospital architecture. The few specimens of Metallic Bedsteads shown present some very pretty and novel features. There are also Fenders, Fire Dogs, and Brasses of the Queen Anne period, Metallic Umbrella Stands, Fire Screens, and Spark Guards of the 17th and 18th century styles, examples of Wrought Iron Work of the 12th and 13th centuries, Church Furniture, Lecterns, Metallic Clock Cases, etc. There are also a Patent Combined Chair, Couch, and Bedstead for the use of Invalids, and a Cot designed specially for Children's Hospitals. This consists of three essential parts—the middle or seat part, the head part, and the foot part, together with a fixed framing supporting the three parts. The seat part is jointed at one extremity to the head part and at the other extremity to the foot part. The several parts can take the following positions respectively. The head can be raised into a nearly vertical position and lowered into a horizontal position. The seat in its normal position is horizontal, but its front can be raised so as to make the seat take an inclined position. The foot can be moved from nearly vertical position into a horizontal position. The several parts can be fixed in any of the positions into which they are brought. The head and foot parts are each provided with counterbalance weights, so that they are easily moved into any required position. The edges of the head part have rods affixed to them, constituting prolongations downwards of the sides. The lower ends of these rods are attached to connecting rods jointed to the lower end of the foot part. When the head part is moved in any direction the foot part moves by the action of the rods described in a like direction—that is to say, if the head is brought upright the foot part is lowered, and if the head is depressed into a horizontal position, the foot part is raised into a horizontal position. In the case of a child's cot, side rails are attached to the framing, and the movable foot part is dispensed with.

Mr. W. H. Lloyd, Harborne, Birmingham, exhibits a collection of his excellent Bronchitis Kettles, and a new combined Vapour Bath, Food Warmer, and Bronchitis Kettle. This little apparatus provides the sick chamber, not only with apparatus for regulating the degree of moisture required, but with the means of producing hot water for tea or coffee, or of heating milk, gruel, broths, or soups in a few minutes in the simplest manner, and practically, without trouble. It consists (1) of a movable stand, containing a lamp for burning methylated spirit; (2) a kettle with an elongated spout for throwing a fine spray of steam in any desired direction; (3) a shorter spout which can be substituted for the other when hot water for making tea or coffee is required; (4) a water bath, with earthenware basin, in which milk, gruel, broth, or other food may be heated as required. The whole apparatus is sent out in a neat japanned tin box, in which it can be kept when not required for use. The kettle and the lamp are so adjusted as to their contents, that the latter will continue to burn for three hours, during which period the kettle will discharge steam, and when the light expires there will remain a small quantity of water. Thus the kettle will never be in danger of burning. The cost of the spirit is about one half-penny an hour. An excellent vapour bath may be extemporised by means of this apparatus. The kettle fitted with the short spout is to be placed under the seat of a chair, with the spout directed backwards, and the lamp lighted. The patient is then to be enveloped loosely in blankets, and to be seated in the chair, leaving sufficient space within the blankets for the steam to completely surround his body. The blankets must be secured at the neck to prevent the escape of steam.

Messrs. Benham and Sons, the old-established ironmongers and sanitary engineers, of Wigmore Street, W., exhibit a variety of useful appliances adapted both for hospital and general use. They consist of an Independent Hospital Cooking Stove, requiring no brickwork or setting, burning wood, coal, or any fuel, capable of boiling, steaming, baking, roasting, stewing; made in various sizes; used at several military hospitals in the colonies, etc., and for camp at Cyprus. A Disinfecting Oven, heated by steam, either by direct action, moist or dry, by jacketed sides; capable of destroying all insect life, etc. Another of the same character, heated by gas; very useful where steam is not available. A Ward Kitchen Range, with oven, boiler, hot-plate, etc., heated by coal and gas, combined or separately; used at Manchester Union Infirmary and elsewhere. A Hospital Slop Sink, of enamelled cast iron, in polished deal frame, very cleanly, very capacious, and thoroughly trapped; used at the Radcliffe Infirmary, Oxford, and elsewhere. A Hospital Coal Cellarette, 'The Londonderry,' strong, light, and capacious; filled at top, emptied at bottom; mounted on silent wheels; made in various sizes. There is a Hospital Bath, strong and portable; on silent wheels; with draw-off cock; and a Child's Hospital Wash Stand of polished deal and slate top, with enclosed closet; as used at the Evelina Children's Hospital. A Child's Hospital Clothes Bin, of polished deal, in two drawers, with hinged lids; as used at the Evelina Children's Hospital. They also exhibit Siemens' Improved Gas Fire, for burning anthracite coal in an ordinary open grate, Anglo-German Porcelain Stove, presenting a clean enamelled surface, beauty of form with neatness; giving out pure inodorous heat; requiring little attention; and the Davy Wash-

ing Machine, as improved by Benham and Sons; simple and effective in its action; used at the Langham Hotel, Manchester Union Infirmary, etc. A Centrifugal Wringing Machine, adapted for hand power or steam; made by Benham and Sons in various sizes, is used in all large laundries. Their Ventilating Globe Light is shown as fixed to ceiling of room, with pipes for removal of gas products and vitiated air of room carried between the joists to the chimney shaft. Fresh air is also admitted by other pipes to feed the lamp and replace the air removed. Made in various ornamental forms and various materials, bronze, porcelain, glass, etc., and in plain inexpensive pattern for hospital use. Lately fitted throughout the New Nottingham University College, Museum, and Free Library; 200 lights in all.

Messrs. Roberts and Co, New Bond Street, London, and Place Vendôme, Paris, who are agents for several noted French productions, exhibit a variety of Irrigateurs, or French Enemas. These appliances, of ingenious construction, are on the principle of the Moderateur Lamp, being dependent for their motive power on a spiral spring; and a similar action to that employed in the lamp named completes the whole of the mechanism, the only difference being that, instead of the water being forced upwards as the oil is in the lamp, a tap is fixed near the bottom, to which is attached a length of India-rubber tube, and a stream of water, which can be regulated to a nicety by the tap, flows through this entirely by automatic action, and so prevents any exertion on the part of the user, as with the ball or piston syringe, the admixture of air is entirely avoided, and the suction sound, often so objectionable to delicate persons, is entirely absent.——A 'Goudronniere', or tar inhaler, is another article of French manufacture exhibited by this firm, and consists of a small oblong tin bath, filled with tar of the red pine. In this bath, several sheets of tin connected with a cover are dropped. By raising these to a certain height, and securing them in that position by a spring, they represent a superficial area of several square feet of tar diffusing its volatile principles through the air, calculated to relieve the sufferings of those afflicted with asthma, bronchitis, etc.——Davidson's American Enema Syringe is also shown, a compact little appliance readily taken to pieces for cleaning, etc.——In preparations, the firm exhibit Vin de Quinquina, or Bark Wine, and the celebrated Vin Mariani, or Coca Wine, which has been noticed in the pages of the London Medical Record on previous occasions, and is yearly increasing in popularity. There are several other preparations in Messrs. Roberts and Co.'s collection, mostly of French manufacture. Amongst these we may mention a 'Poudre Purgative', or Compound Liquorice Powder, a mild and gentle purgative, Santal Capsules, Capsules of Cod-liver oil, and of Castor Oil, Medicated Soluble Bougies, *perles de térébenthine*, and several others of a kindred character, in which the French chemist has devoted considerable skill and attention in perfecting and rendering them operative in a short space of time, while divesting them of their nauseous flavours.

Messrs. Wm. Benger and Sons, Sophien Strasse, Stuttgart, through their agents, Messrs. Newberger and Co, 53, Wood Street, Cheapside, exhibits a variety of Under Clothing, called Woollen Stocking-Nett Hosiery, of which they are the patentees and manufacturers. These articles, introduced upon a theory propounded by Professor Gustav Jaeger, in several of his works, and particularly in one named *The Normalkleidung; or, Rational Clothing System as a Protection to Health*, appear to be largely used upon the continent. They have a beautiful soft feel and texture, and are made of the finest wool only, though, as may be inferred from the title, they are woven under a different system from the ordinary wool clothing. It is claimed that, by the principle adopted, while retaining all the warmth of those woven in the usual manner, they act as conductors for the discharge from the pores during perspiration, while the old mode has an opposite tendency. They are made in garments both for ladies and gentlemen, are very moderate in price, and can now be obtained through any draper in the United Kingdom.

Amongst the other preparations exhibited in advanced Pharmacy, we may mention the 'Lactopeptine' of Mr. John M. Richards, Great Russell Street, W.C. This preparation is one of those which aim to reproduce the five active agents of digestion, combined in the same proportions that they exist in the human stomach, viz., pepsine pancreatine, diastase, sugar of milk or lactin, and lactic and hydrocholic acid.

We noticed two new non-alcoholic drinks by Messrs. J. Moorhouse and Co., Queen Street, Hulme, Manchester. One of these is named 'Sparkling Rozo', and contains glycero-phosphoric acid. It is pleasant to the taste, and is an agreeable form of taking glycerine and phosphoric acid for those who require those therapeutic agents. The other drink noted by us is a 'Sparkling Eupotus', a simple ærated water, flavoured with Jargonelle pear.

Messrs. Mottershead and Co., Exchange Street, Manchester, exhibited a collection of Benger's preparations of the 'Natural Digestive Ferments', which have attained considerable notoriety. 'Liquor pancreaticus' contains the proteolytic and diastasic ferments of the fresh pancreas, and is said to be capable of converting proteids into peptones, and starch into sugar with wonderful rapidity. It is largely used in the preparation of peptonised or partially-digested foods, such as milk, gruel, soups, etc., and has been attended with great success in the treatment of certain diseases. It is also intended to be employed medicinally in small doses, either mixed with food before a meal, or with a few grains of bicarbonate of soda in a wine-glassful of water. 'Liquor pepticus' is another form of the preparation, containing the constituents of the natural digestive principles of the stomach. It is prescribed in doses of one or two teaspoonfuls in a wine-glass of water, to be taken with or immediately after meals, especially those which include meat or eggs. A host of recipes accompanies these preparations for making various kinds of peptonised foods. We have every reason to believe they are well and carefully prepared, and may be regarded as thoroughly trustworthy preparations. Another form in which they were shown was Benger's Pancreatised, or Self-Digestive Farinaceous Food, for infants and invalids, which contains, besides diastase, trypsin, a natural digestive principle, capable of digesting the albuminous portions of grain, milk, and other substances, untouched by diastase, which causes it to be more suitable for delicate children, or those with impaired digestive powers. Two other useful forms in which these ingredients are present were shown in the form of Peptonised Beef Jelly and Peptonised Wheat Jelly. Messrs. Mottershead and Co. also exhibited the Continuous Current Leclanché Battery, and their Improved Uni-direction Induction Apparatus, exceedingly well made and simple in construction.

Amongst the specialities in foods and preparations for the sick and invalids, Messrs. Brand and Co.'s collection showed to advantage. Their Essence of Beef, Mutton, Veal, and Chicken is well established in medical estimation. Their Savory Meat Lozenges are most useful to travellers, and invaluable on long journeys. The numerous other little articles of food, in the shape of Potted and Prepared Meats, etc., are useful articles of diet. Malt Extracts are well represented, and the sale appears to be very much on the increase. A Norwegian preparation of this article, said to be manufactured from Norwegian malted barley only, was shown by Mr. W. F. W. Eckell of Christiania, Norway, which appears, from the testimonials, to be much appreciated in that kingdom, and to have a large sale; and the analysis comes out well in comparison with others of its class. That of Johann Hoff, shown by Mr. Newman, Railway Approach, London Bridge, has been before us for many years, and is generally favourably known amongst the profession. But the most popular preparations of Malt, or Malt Extracts, are no doubt those of Mr. Leopold Hoff of Charterhouse House Buildings, E.C., and Hamburg. This bottled beverage has been before the public for many years, and has received high commendations in the most influential quarters. Experiments made by J. J. Coleman, Esq., F.S.C., etc., on the constitution of malt

liquors and their influence upon digestion and nutrition, who speaks in the highest terms of Leopold Hoff's Malt Extract, show us, amongst other things, that the amount of starch which became soluble in bread by the agency of various liquors, the bread used in each case being of the same weight, was: Burton ale, 15 per cent.; London porter, 30 per cent.: Wrexham ale, 26 per cent.; while Leopold Hoff's Malt Extract dissolved 60 per cent. Mr. Hoff's new preparation, Extract of Malt Jelly, appears likely to find considerable favour with the profession, as it can be prepared in such a variety of ways, and is introduced in a more concentrated form than any previous compound prepared from malt, obviating the objections hitherto made by many physicians and others to such forms of the extract. The present preparation is solid, not fluid, and can be taken in smaller quantities and with like effect, owing to its highly concentrated form. It is sent out pure and flavoured, also combined with iron, quinine, pepsine, and with various fruits. It is not sticky, is not overburdened with sweetness, an objection urged against similar preparations, and always leaves an agreeable taste in the mouth. Mr. Hoff's Hygienic Malt Chocolate is a delicious and nourishing article of food, and the Malted Chocolate Food for infants is no less meritorious.

Messrs. J. F. Macfarlan & Co., North Bridge, Edinburgh, exhibit two classes of preparations, the first being opium alkaloids and other substances used in medicine; and the second, antiseptic preparations used in Prof. Lister's system of surgical treatment. In the first case are morphia, codeia, narcotine, narceine, thebaine, papaverine, and pseudomorphine, with many of their salts. Among these are the muriate, sulphate, acetate, meconate, and tartrate of morphia. The last is now used to a considerable extent for hypodermic injection, it having the advantage over the acetate, in forming at once a clear solution in water, and the solution being free from acidity. There are muriate and sulphate of codeia, both of which are readily soluble in water. They show in glass basins, crystallisations of codeia and of morphia meconate. The other preparations which they exhibit in this class, are chloroform, salicin, alvin, chrysophanic acid, and sulphate of beberine, all of which are prepared by them on a large scale. In the second case is displayed a complete set of the Listerian antiseptic dressings, including antiseptic gauze, with bandages made from it, carbolised lint, jute, and tow; catgut ligatures, silk sutures, and oiled silk protective, in all of which carbolic acid is the active agent. They have also boric lint and wool, salicylic wool, pink jacconet, and eucalyptus gauze. The firm has given great attention to the production of this class of preparations, from their first introduction, and takes special pains to have the articles of uniform quality, never failing to contain a sufficiency of the antiseptic ingredient.

Messrs. Allen and Hanburys exhibit, side by side with their Finest Cod-Liver Oil made by the ordinary process, for which they obtained the highest award at Philadelphia and a silver medal at Paris, their 'Perfected' Cod-Liver Oil, prepared in an altogether new and special way, and which is now well known for its almost absolute freedom from the usual nauseous taste and smell and property of not 'repeating'. They also show their new Malted Farinaceous Food, which they have patented, and which differs from other forms of Liebig's Food, in that the malt is present in a soluble, concentrated, and most active form, rendering the food not only most nutritious but self-digesting. Being cooked, it requires neither boiling nor straining. Their pure Extract of Malt is also shown. Besides the above, there is a large assortment of various Pâtés de Jujube, including a beautiful series of medicated ones, which are intended to supersede the ordinary hard, rough, and angular lozenges. These were first made at the suggestion of Dr. Prosser James. Chrisma, which has recently come into notice as a valuable parasiticide, as well as an inoxidizable basis for ointments, is also shown. A large jar of the Fluid Extract of Tonga, and a few samples of ordinary pharmaceutical preparations, such as Fluid Extract of Ergot, Tincture of Henbane, etc., of very excellent quality, complete Messrs. Allen and Hanburys' own exhibits. We must not pass over a new remedy for whooping cough, from the United States, for which Messrs. A. and H. are agents, and which they exhibit, viz.: Page's Vaporiser and Cresoline. It is said to be a most valuable specific for the disease, and is already in extensive use throughout America. For further particulars of the above, we would refer our readers to the handbills, which can be obtained on application to Messrs. Allen and Hanburys.

Messrs. F. Newbery and Sons, 1, King Edward Street, Newgate Street, London, as agents for W. R. Warner and Co., Philadelphia, U.S.A., have a handsome case containing the Sugar-Coated Pills manufactured by that firm, which have attained great popularity. It is claimed that sugar is the only proper material with which to coat a pill:—1, Because it is more soluble than gelatine, glue, chalk, or talc, of which gelatine and glue are the same in substance and properties. 'Sugar-coated pills are more soluble than gelatine-coated or compressed pills.'—Professor Remington's paper read before the American Pharmaceutical Association, Boston, 1875. 2, That according to their process, no sub coating of insoluble shellac or gum mastic, or 'oily' surface polishing is necessary. 3, That the direct application of heat is entirely avoided, and the masses can be coated when so soft as not to admit of being dipped in a hot solution of gelatine. 4, Sugar as a coating is not incompatible, as is the case with gelatine, etc., when brought into contact with certain kinds of food, astringent fruits, or wine containing tannin, by which the gelatine is converted into a condition of the basis of leather. 5, The preservative properties of sugar, and the tendency to attract rather than yield moisture, prevent the subsequent drying and hardening of the pills. 6, A round substance is more easily swallowed than one which is elongated, flattened, or pointed, there being no art in deglutition that would enable it to pass endwise. 7, The colour and shape of some varieties of oviform gelatinised pills, are so inelegant, by comparison with the spherical white sugared pill, as to be repulsive to sensitive patients. 8, Actual experiments which are enabled to be performed as to solubility, and the administration of a dose of cathartic pills, the effect of which is soon apparent, will practically demonstrate the truth of the claims put forth by Warner and Co.

Mr. J. N. Davidson, Manufacturing Pharmaceutical Chemist, Dundee, has an interesting collection of preparations, one of the most important being a Compound Cod-liver Oil Emulsion, which is also shown in another form, in which quinine is added; and in a third formulæ, called Compound Phosphorised Cod-liver Oil Emulsion; and in a fourth, in which quinine is present as well as phosphorus, the quantities being, in addition to the oil, one-fifteenth of free phosphorus in each ounce, and one grain sulphate of quinine per ounce. In each case the emulsion is perfect and permanent and does not separate. Mr. Davidson has succeeded in medicating this popular oil as to make it tasteless and scentless; and he makes no secret of his process. He turns the oil into paste by mixing 75 per cent. of it to 25 per cent. of pepsine, hypophosphite of lime, and lactophosphate of lime. The result is a paste that may be eaten like butter, and of most unobjectionable character. A host of the profession in North Britain speak in the highest terms of Mr. Davidson's formula.

Amongst the disinfectants, the exhibits of the Sanitas Company, Limited, Bethnal Green, London, hold an important position. Whether viewed as a disinfectant, a deodoriser, or an antiseptic, it is equally valuable, and it is peculiar as being the only known preparation that can claim to be both antiseptic and disinfectant in its properties; and unlike most other agents, it is not only non-poisonous, but is healthful, and leaves no stain on linen or furniture. It is unnecessary for us to enter into any history relating to the invention of 'Sanitas' through the experiments of Mr. Kingzett and Mr. Maximilian Zingler. That is well known to the sanitary world, and to the medical profession generally. We here wish to draw the attention of the general public to the various preparations for domestic uses

made by the Company, all of which contain, in a greater or less degree, the disinfecting properties of 'Sanitas.' The simple fluid called Sanitas is the strongest antiseptic known, but we must refer the reader to the pamphlet published by the Company for an account of the many uses to which it has been applied. 'Sanitas' Oil, produced during the making of the 'Sanitas' fluid, is the oxydised oil of turpentine, and has been found of invaluable use to the medical practitioner for various purposes, such as the irrigation of wounds, the anointing of sores or ulcers, fumigating apartments, etc., and, although of an oily nature, may be said to be an extremely concentrated form of the aqueous fluid, and is used in the preparation of all the 'Sanitas' products. The toilet fluid is another form of the aqueous character, called Toilet Sanitas, and is intended to take the place of the so-called toilet vinegars, or it may also be used in the bath, though the ordinary fluid, in the proportion of one pint to ten gallons of water, produces a luxurious bathing medium. The Sanitas Disinfecting Powder is packed in dredgers in a similar manner to carbolic acid. It is believed to be a more powerful antiseptic and oxydising agent than any other preparation of the kind, and it is perfectly healthful and pleasant. It is also made as a toilet and nursery powder, free from all mineral and poisonous matters, healing and soothing in its properties, and is specially recommended for infants. There is, in addition, the Sanitas Tooth Powder, and, without going so far as to say it is a specific for toothache, it is calculated to arrest decay; and used by persons, suffering from decayed teeth, and the constant liability to toothache, it, generally speaking, has a tendency to give relief, and to exert a soothing influence. Sanitas Oil is utilised for soaps, and the company manufacture a toilet soap with which the most fastidious can scarcely find fault. It lathers quickly and easily, glides smoothly over the skin, and produces a smoothness and softness to which few other soaps can lay claim. We have it also as an ordinary household and disinfecting soap, as a soft soap, and even as a furniture cream. Thus, in providing ourselves with the different preparations of Sanitas, we are surrounding ourselves with valuable, pleasant and useful agents, which reduce the dangers of infection to a minimum, and provide us with some of the most necessary articles required in the household.

MESSRS. W. H. SCHIEFFELIN AND CO., William Street, New York, have sent a handsome case and collection of their popular Coated Soluble Pills and Granules which have attained much notoriety in the United States, and received a silver medal at the Paris Exhibition, 1878, and first award at Sydney, 1879. The coating of these pills, which is to some extent a secret, is an inert, soluble compound, dissolving upon the tongue in all cases almost instantly, entirely tasteless, perfectly transparent and colourless, thus disclosing to the eye the exact colour and appearance of the principal ingredients, and at the same time certain substances, such as proto-salts of iron, phosphorus, etc., are effectually protected against oxidation, etc. The firm maintain that the action of their pills are as prompt as any uncoated ones, which they contend is not the case with those coated with other substances.

A Plan for the Re-construction of University College Hospital on its present site is shown by Dr. G. V. POORE and A. WATERHOUSE, Esq., A.R.A. The following is Dr. Poore's description of the plan. The plan has been accurately adapted to the present site; this being a matter in which there was no choice. It is by some thought advisable that hospital wards should be in one-storey buildings, and this rule might be followed if cost were no object, *and if there were no high buildings in the immediate neighbourhood.* In London, however, the cost of space necessitates lofty buildings, and it may well be that, in a crowded city, the sanitary conditions become rather more favourable as we ascend, and rise out of the lower impurities. It would be an advantage, no doubt, if the out-patient department could be removed to an area distinct from the rest of the hospital. This, however, is impossible, and any plan to be of service must be applicable, not only to the present site, but to the work, as at present carried on, on that site. The main principle of the scheme is, that each pavilion should be a building complete in itself, and that at all times it should be impossible to pass from one pavilion to another, from one storey to another, or from one ward to another, without going into the open corridor. it might be objected that great inconvenience would be thus caused to those who have to visit the wards, but a doctor visiting the wards of an hospital should regard himself rather as walking from house to house than from room to room, and should be clothed accordingly. The building resembles the letter E, the horizontal limbs formed by three pavilions pointing towards the open space in front of the College. Every part of the building is thus made accessible to what pure air there may be on this space. The width between the centre pavilion and those to the north and south of it is from 72 to 80 feet, or nearly the width of Tottenham Court Road. The pavilions are connected at their western extremities by open corridors, through which the wind would be able to blow, and thus the entire area would be thoroughly ventilated. The private wards and residents' rooms occupy a building on the western side of the connecting corridor, while the staircase-turrets are on the eastern side, midway between the pavilions. The position of the connecting corridors and staircases is such, that, in the event of extension along Grafton Street or University Street, they would still be in a convenient position for a larger hospital. The building is 5 stories high, and stands about 63 feet above the pavement—the basement storey 16 feet (9 above the pavement), three stories of wards (13 feet each inclusive of floor) 39 feet, and top storey of 15 feet, exclusive of sloping roof. The basement is lighted by large windows and skylights, and would extend over the whole area, exclusive of the space of 36 by 36 feet, which is appropriated to the back yard. The roof of the basement extending between the pavilions would serve for two recreation courts for patients. The general construction of the basement would resemble, it is thought, that of the large drapers' shops, and would be as light as possible. In it would be found accommodation for casualty rooms, out-patient waiting hall, out-patient consulting rooms, two small casualty wards, containing one bed each, dispensary, dispensary store, and electrical room, in the southern half; board room, secretary's office, residents' dining room, inquest room, steward's and housekeeper's offices, etc., in the northern half; cellars under the Central Pavilion (which would be difficult to light), and baths and heating apparatus, under the residents' building to the west. It is thought that the out-patient department might be ventilated by windows and tubes, and that the foul air might be carried off through special ducts communicating with the furnaces, which would be necessary for the baths and heating apparatus. In this way the nuisance of the out-patient department would be reduced to a minimum. Next as to the three stories devoted to wards. They would be exclusively devoted to patients, and each pavilion would contain three wards. The wards in the north pavilion would be 120 feet long. Those in the centre pavilion 80 feet long, and those in the south pavilion 88 feet. All wards are 25 feet wide. Altogether in this way we should get 21,600 square feet of floor space available for patients; and giving 120 square feet to all patients, children as well as adults, we should get accommodation for 174 patients. In addition to this, there would be 24 beds in private wards, making 198; and if the children and chronic cases were allowed 100 square feet instead of 120, the building would accommodate considerably more than 200 patients. The W.C.'s and sculleries are in slightly projecting turrets at the east end of the pavilions. These turrets meet in an arch at the top of the third floor, and over this arch (in the top storey) the seats in the lecture theatre would be arranged. The W.C.'s and sculleries are purposely made as small as possible. If they be large enough that is sufficient. Excess of cubic space in these apartments is mere waste, adds greatly to the expense of the building, and tends to encourage untidiness and dirt. A kitchen with a large kitchen range, etc., attached to a ward is quite unnecessary, a few gas-jets,

sufficient to cook a chop and heat water or liquid food is all that is required. The top storey is 15 feet in height, exclusive of the roof. Here one would propose to place every thing which may give rise to offensive emanations, and those apartments for which light and air are especially necessary, thus: A. *In North Pavilion*—(i) The dead-house and *post mortem* room (communicating by a special lift with the 'back yard', into which the hearses drive for the removal of the dead); (ii) Registrar's rooms; (iii) Urine laboratory; (iv) Dispensing laboratory and clinical lecture theatre. B. *In Middle Pavilion*—(v) The operating theatre, etc. C. *In South Pavilion*—(vi) The kitchen, etc., with a few servants' bed-rooms. The advantages both for lighting and ventilating possessed by rooms on the top stories is too obvious to call for any remarks. The necessity for a maximum amount of light in *post mortem* rooms, laboratories, and operating theatres, is also obvious. Next as to the building occupying the west side of the area. The bottom of the building would be occupied by the baths and heating apparatus; the first and second floors by rooms for 10 residents (2 rooms each); the third and fourth floors by private wards and small wards: and there would be here a partial fifth story, extending over the staircases and west building, affording accommodation for 2 wards for infectious cases. The corridors are 8 feet wide, except in the space between the staircases, where they are 12 feet wide. Here there might be seats, and these wider corridors would serve as rallying points for students waiting to visit the wards with the physicians and surgeons. The corridors are open so as to allow of the free flushing of the area by the west wind, but Louvre boards might be provided as some protection against weather, when necessary. These corridors, it is thought, while serving a most useful purpose, would form an architectural feature of some beauty. The entrances would be (1) for patients, in University Street; (2) for management and students, in Grafton Street. The out-patients' exit would be through a revolving grating in Gower Street. There is no grand entrance, since it takes up room, and serves no useful purpose. The staircases, in separate buildings are 6 feet wide, and in the centre of each is a lift going from the bottom to the top of the building. The double staircases, and the fact that the staircases would be between walls, would render the building a safe one in case of fire. No nurses' rooms have been provided, because it is believed that when a nurse is on duty her proper place is in the ward, and that when she is off duty she is better out of the hospital altogether. They would live, as at present, in a separate house.

MR. H. K. STEVENS, Ampthill, Beds., is present with the celebrated Water from the Flitwick Mineral Springs, of which he is the proprietor. These valuable Mineral Springs, yielding a large supply of tonic and invigorating waters, and rising within 40 miles of London, have only lately been discovered. Mr. Stevens has already brought them under the notice of Professor White, and many medical men in the neighbourhood of London and Bedford. Strongly impregnated with iron, sulphur, magnesia, etc., it has been tried with great success on many long-standing cases of debility, dyspepsia, asthma, and rheumatic gout, and also in a modified form for outward application in skin disease. Carefully attested cases of cure, and medical evidence, will shortly be made public. Mr. Stevens will be glad to send samples to any medical men, chemists, or others interested in the valuable properties of the waters. The following analysis was made by Professor W. White, when it was found to contain in each gallon:—oxide and carbonate of iron, 144.0; sulphate of magnesia and soda, 59.20; carbonate of lime, 11.54; muriate of magnesia (chloride), 15.16; silica, 3.40; carbonate of magnesia, 5.42; carbonate of soda, 0.22; ulmic, malic, and other acids, constituents of vegetable matters, 13.32. The taste of the water may be inferred from the above analysis, which is not at all unpalatable, and in colour it is somewhat of an orange yellow.

The exhibition of Schering's chemicals by Messrs. ZIMMERMANN, their London Agents, is distinguished by one most important novelty, Cinnamic acid. In a patent taken out by J. A. Zimmermann under the 12th July, 1880, for the manufacture of bitter almond oil, benzoic acid, etc., it will be found that a process communicated by Dr. Emil Jacobsen of Berlin is described for the synthetic production of certain aromatic acids and ethers, and the simultaneous production of chlorides of organic acids in the presence of certain metals or their salts. The particulars of that patent will disclose that without the presence of these metals or their salts, the conversion will not take place, except with great difficulty, expense, and waste. Cinnamic acid being one of these products promises a most important history in the arts and medicine; for the former, because of its cardinal mission in the manufacture of artificial indigo; in the latter, on account of its recently discovered powerful and convenient antiseptic properties. Experiments have been made in several hospitals of Berlin, and, as we are informed, most successfully, in the dressing of wounds and surgical operations. These antiseptic properties seem to give it a foremost rank before all others; but as we are told that Professor Langenbeck of Berlin, under whose direction experiments have been made at the Charité Hospital in Berlin, intends to visit this city at the time of the Medical Congress, it is perhaps better to refrain from prematurely entering into particulars. The specimen exhibited shows white transparent silver flakes, and it may be taken as the very first sample brought to this country. That its manufacture is being conducted on a commercial basis seems to indicate the good size of the sample exhibited. The other fine specimens of the Schering's factory products are so well known, except that, like all the products of that factory, they are stamped by the most perfect workmanship in appearance, and are freely inviting a searching examination for the most perfect chemical purity by the facility with which samples are offered to the practical examiner. A peculiar looking and new product is the tannic acid patent crystals. Its golden hair-like appearance gives it a special claim to attention. The soft extract of tannic acid has hitherto been dried by high temperature; this now is a specimen of the soft extract forced through a thin sieve, and the streams proceeding from it have lost all their moisture in the ordinary temperature of the atmosphere. The advantage is obvious, that while at a high temperature it cannot be avoided that part of the tannic acid will decompose into gallic acid, this new process at ordinary low temperatures will not give occasion to such decomposition, and warrant a pure tannic acid in a most convenient form. The advantage is, perhaps, only of importance to the commercial application of the acid, inasmuch as, therapeutically, the acid will only be given in its most perfect form as levissimum, of which a very fine sample is exhibited. The iodoform exhibited certainly shows a brighter colour and more substantial crystal than its rival specimens exhibited.

MESSRS. FELTOE AND SONS, Albemarle Street, Piccadilly, whose 'Spécialité' Sherry has gained an extensive and well-earned reputation amongst the profession and private families, exhibit this popular sherry and a new 'Spécialité' Lime Juice Cordial. This Cordial is said to be made of the pure juice of limes, with but a little saccharine matter, and contains no sulphuric acid. It is most pleasant to the taste, and quite devoid of that unpleasant flavour too often attaching to lime juice cordials; it is warranted not to become mildewed by exposure to the air. Dr. J. M. Crombie pronounces it to be a safe and excellent antidote for thirst.

MESSRS. SAVORY and MOORE also exhibit, as the agents of Delacre's Extract of Beef Company, Limited, their excellent and now well-known preparation, which they have aptly named 'Extractum Carnis'. It appertains to the character of meat broth, from which the water has been evaporated; and it contains all the substances from which meat broth derives its flavour and quality, such as creatin, sarcin, the chlorides, phosphates, etc., and has all the principles of meat, without fibrine, albumen, gelatine, and fat. The salting, smoking, and drying of meat renders it barely wholesome, and certainly not palatable, so that those processes are never likely to be able to compete with that of extraction, and even if fresh meat can eventually be brought to England in low temperature chambers, the importance of 'Extractum Carnis' will in no way be

interfered with, as it is always certain to be an invaluable stimulant for convalescent persons and delicate children, whilst for exploratory expeditions, public establishments, travellers, and sailors, its advantages are never likely to be surpassed. The scene of operations of this company is at Uruguay, South America, and the fine flavour of the cattle from that district and the River Plate is too well known to require further comment here. The Delacre Extract is free from fat and gelatine, and each pound is said to contain all the soluble nutritious constituents of about 36 pounds of best beef, exclusive of bone and fat. Moreover, an important feature in this particular extract is that it is perfectly soluble, and dissolves in hot or cold water, without leaving any insoluble deposits whatever. We have no doubt its several advantages will soon cause it to become as popular here as the best known preparations of a kindred character.

MISCELLANY.

CEREBRAL CIRCULATION.—A French physiologist, M. Gley, has made some delicate experiments on himself with regard to the effects of attention and intellectual work on cerebral circulation. His results confirm those of M. Mosso, and he has added some new observations. He finds that the rhythm of the heart through intellectual work is slightly accelerated; and this increase seems in direct ratio of the intensity of the attention. Thus, the pulse was more frequent when the author studied geometry, with which he had little familiarity, than when he studied philosophy, of which he had a good knowledge. While the heart-rhythm is accelerated, the carotid artery is dilated during cerebral work, and the carotidian pulse becomes dicrotic; but the radial pulse becomes smaller and less ample. The phenomena of congestion observed in the brain persist a certain time after cerebral activity.

THE DEVELOPMENT OF FROGS.—M. Yung has lately been experimenting on frogs, with special regard to the effects of different kinds of food. Fifty tadpoles of one hatching (in the laboratory) were divided into groups in five vessels, and all the physico-chemical conditions of these groups—temperature, light, nature of liquid, etc.—were carefully kept the same, with the one exception of food. The tadpoles in the first vessel had a purely vegetable diet—fresh water algæ, carefully washed. Those in the second had no other food than the gelatinous substance round the frog's egg, which is normally the food of the young animal. This, when no longer procurable, was replaced by liquid albumen of hens' eggs. Those in the third vessel had fish, those in the fourth beef, and those of the fifth coagulated albumen of hens' eggs. The quantity of food was always abundant, and often renewed. The degree of development of the animals was ascertained by measuring the size of a certain number of individuals from each vessel. Differences very soon appeared. It was found that the varieties of food given stand in the following order of decreasingly favourable character—beef, fish, coagulated albumen of hens' eggs, albuminoid substance of frogs' eggs, algæ. As for the last two, they are insufficient to transform a tadpole into a frog. Contrary to a general opinion, a purely albuminous substance, such as white of egg, suffices for the transformation of the tadpole.

AUTOMATIC REGISTRATION OF BODY-TEMPERATURE.—A new form of thermograph, capable of recording automatically the rise and fall of temperature of the body for a given length of time, has been recently invented (we learn from the *Scientific American*) by Dr. Adams, of Colorado Springs. Its principle is, causing the electrical resistance of a fine powder in a tube to vary by means of pressure derived from heat. A vulcanite tube is filled with a fine powder made of plumbago, gas carbon, and silver; these contents abutting at either end against a platinum knob. One knob is attached to a hard rubber bracket, and the other (which imparts the varying pressure), to the free end of a spiral spring, constituting the thermometer proper. This spring is made of two slips of brass and steel, soldered together, the brass occupying the outer side. The more expansible brass, on rise of temperature, causes the free end of the spring with its terminal knob to twist, and so exert increasing pressure on the tube-contents. An electric current is sent through the substance in the tube, entering and leaving by binding posts; and its variations with the varying pressure affect an ingenious electromagnetic mechanism, which produces on a moving surface a sinuous line, the graphic representation of the changes of temperature. The thermometric part of the apparatus is suitably enclosed in a circular, perforated German-silver case, which is secured in proper position in the armpit. Dr. Adams is arranging to obtain on the same strip of paper, not only a curve of the febrile condition of a patient, but also a sphygmographic and respiratory curve, so that the interrelationship of these cardinal symptoms, under varying circumstances, may be easily studied.

A PECULIAR AFRICAN FAMILY.—At a recent meeting of the Royal Irish Academy, Professor O'Reilly read a letter from Dr. Macalister, in which he said:—'Some years ago, my friend, Dr. Minchin, showed me the enclosed photograph, brought home by his son, the late Dr. R. Minchin, and informed me that the man depicted belonged to a family somewhere in West Africa, and that they were famous as executioners, and all the family had the same horns, some bigger and some less. I made a large number of inquiries among my acquaintances, residents of the West of Africa, and have got very little satisfaction, until Dr. Allen on a former visit discovered that these people lived at Akim, and confirmed the particulars brought home by Dr. Minchin. In one other case which I have heard described, the horns are on the malar bone, and projecting externally to the eye. In the photograph sent by Dr. Minchin the horn is maxillary, and is an outgrowth of the front border of the floor of the orbit. I have no African skull showing any approach to this peculiarity of organisation.' In a letter of the 26th of February 1881, written by Dr. Allen, of Bathurst, West Africa, to Dr. Macalister, the writer says:—'You will recollect that Captain Hay (now in Tobago) had stated he had seen these men at Akim. He had one of the men *en route* for England, but he refused to proceed eventually. Captain O'Brien saw this man at Elmina, and he describes him as follows. He was as regards physique, colour, hair, etc., similar to an ordinary native. The horns occupied the malar region—were about 2 in. in length, their direction being, I believe, from his description, upwards, outwards, and forward, non-movable, and covered with skin.' An inspection of the photograph shows this, that the technical description of 'the horns' on the malar bone, projecting externally to the eye, might be expressed in another form by simply saying that on each side of the nose, and below each eye, there is some sort of an excrescence amounting to a natural deformity, just as much as a round foot is a natural deformity, and that it is rather an abuse of terms to apply the word horn to it. Dr. Frazer said it would be interesting to learn whether the peculiarity described was due to a diseased state, or was of a racial character. Many present remembered a gentleman in Dublin who had a horn protruding from under one eye, which was removed by a surgeon. It was astonishing, first, that in the African there were horns under both eyes; and in the second place, that no surgeon had been found there ready to operate. At home, twenty-four hours would not elapse before an operation was at all events attempted. He hoped the matter would receive most searching and thorough investigation before receiving the *imprimatur* of the Academy. He moved that the communication be referred to the council for publication. Dr. Ball (Astronomer Royal) seconded the proposition. It was highly probable, he said, that, considering so large a sum as £15 had been offered for a skull, a skull would be forthcoming ere long.

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THE TRUTH ABOUT VACCINATION.

An Examination and Refutation of the Assertions of the Anti-Vaccinators.

By ERNEST HART,

Chairman of the Parliamentary Bills Committee of the British Medical Association, and Chairman of the Council of the National Health Society.

EXTRACT FROM AUTHOR'S PREFACE.

'It seems needful to explain in a few words the circumstances under which this pamphlet comes to be published. I have, for several years past, been frequently appealed to, by all sorts of people, on all sorts of occasions, for a statement of the facts which would enable them to answer the strong assertions of a certain class of agitators who describe themselves as anti-vaccinators. These gentlemen are so very persistent in their agitation, and so elaborately wrong in their statistics and arguments, that it has really become a matter of no small difficulty for a technically uninstructed person to examine their figures or test their allegations.

'On the occasion of two of the most recent Parliamentary elections, I was hurriedly applied to by candidates for references to the sources from which to answer their anti-vaccinating persecutors. Members of Parliament and magistrates are, indeed, often at their wits' ends to know where to find the true facts which these gentlemen delight to misrepresent.

'I have, of course, been able to refer enquirers to the standard works on the subject, and to the Registrar-General's statistics; but a need evidently exists for some more concise statement of the merits of vaccination, which will obviate the necessity of individual research into the evidence in its favour. As a matter of fact, I have not been able to refer my enquirers to any such statement, and it seemed to me, therefore, that there would be great advantage in the truth about vaccination being placed before the public in a handy and readily accessible form, so as to supply the materials for an answer to the numerous objections of the anti-vaccinators. Under these circumstances I consented, at the request of the National Health Society, to deliver a public lecture on the subject. This lecture was given at the Hall of the Society of Arts, on the 27th of January last, and is now, in compliance with very numerous requests, printed (with considerable additions) in the present pamphlet.'

SYNOPSIS.

CHAPTER I.

SMALL-POX UNCONTROLLED BY VACCINATION.

Introduction.—Anti-vaccinatioo tactics—Perversions and inaccuracies of anti-vaccination tracts—Small-pox in its natural state, uncontrolled by vaccination—Amongst remote communities—Among the Indians—In civilised Europe—In England—In royal and noble families—After effects of non fatal attacks of small-pox—Macaulay's description of ravages of small-pox in seventeenth century—Introduction of inoculation and of vaccination—What vaccination is: Jenner's opinion—Power of vaccination in influencing small-pox—Modifying power of vaccination—Statistical evidence of the different degrees in which persons vaccinated in different ways will be safe against death by small-pox.

CHAPTER II.

OBJECTIONS TO VACCINATION.

The anti-vaccination creed—Reckless and absurd nature of objections—Alleged introduction of diseased matter by vaccination—Allegation that vaccination is small-poxing—M. Chauveau's experiments—Their fallacy explained—Mr. Ceely's and Mr. Badcock's successes in the variolation of kine—Use of variola-vaccine lymph never followed by infection of small-pox—Inaccuracy of statement that vaccination is mainly derived from small-pox inoculation of calves—Real source of chief part of lymph in present use—Absurdity of allegation that vaccination breaks the law forbidding inoculation.

CHAPTER III.

ALLEGED MISCHIEF FROM VACCINATION, AND INCREASED MORTALITY FROM CERTAIN DISEASES.

Allegation that vaccination propagates enthetic and constitutional diseases—Source of fallacy with regard to this question—Vaccination gives immunity from small-pox only—Explanation of Mr. Hopwood's Parliamentary Return of 1877—Comparison of present with past diseases very liable to fallacy—Hypothesis that vaccination renders persons more liable to other diseases than small-pox contrary to the whole current of medical experience—Allegation that cutaneous diseases and glandular swellings are introduced by vaccination—Erysipelas after vaccination—Syphilis after vaccination—Allegations of invaccination of syphilis may easily be made in cases where there is not even a pretext for them—Practical and common sense view of question—Experience of Medical Department of the State as to alleged injury from vaccination—Danger, if there be any at all, of communicating through vaccine lymph any other infection than its own, practically non existent—Medical concurrence in belief of non-communicability of disease by vaccination—Opinion of Select Committee of House of Commons on the question—Animal vaccination—Its advantages.

CHAPTER IV.

SMALL-POX CONTROLLED BY VACCINATION.

Allegations that vaccination intensifies small-pox, and that it does not diminish the small-pox death-rate—London experience—Average fatality from small-pox in Metropolis forty times greater in seventeenth and eighteenth centuries than now—Results of more general practice of vaccination—Diminution of small-pox mortality—Change in proportional fatality of small-pox at different ages, due to vaccination of young children—Increasing protection of young children from fatal small pox—Experience of Metropolitan Asylums Hospitals in recent epidemic—Small influence of sanitary measures on small-pox.

CHAPTER V.

VACCINATION AS A PROTECTIVE AGAINST SMALL-POX.

Complete inaccuracy of allegation that vaccination has no power of preventing small-pox—Incomplete protection after puberty afforded by much of past vaccination—Importance of re-vaccination—Effect of vaccination upon susceptibility to small-pox in the individual—Experience of last epidemic—Beneficial effects of vaccination most marked in mortality from small-pox—Varying protection afforded by different qualities of vaccination—Mr. Marson's evidence given before the House of Commons—Experience of Metropolitan Asylums Hospitals—Distribution of small-pox mortality amongst the unvaccinated and persons vaccinated with various degrees of completeness—Vaccination marks of patients at Homerton and Hampstead Small-pox Hospitals—Conclusion as to relative mortality amongst vaccinated and unvaccinated—Results of examination of vaccination marks of recruits—Mr. Marson on degrees of severity in small-pox after vaccination.

CHAPTER VI.

RE-VACCINATION.

Desirability of re-vaccination—Age at which it should be performed—Absolute protection afforded by re-vaccination to nurses of Small-pox Hospitals—Also to nurses and attendants of Metropolitan Asylums Hospitals—Protective influence of re-vaccination amongst soldiers and sailors—Marked decrease of small-pox mortality amongst these protected services—Concluding suggestions.

SUMMARY OF CONCLUSIONS.

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A.—Official instructions for vaccinators under contract.
B.—Letter of the Local Government Board on the subject of repeated vaccination prosecutions.
C.—Table I. Small-pox mortality in England and Wales.
D.—Table II.—Annual mortality from small-pox in England and Wales, with the proportion of deaths to population and to total mortality, from 1838 to 1877 inclusive.
E.—Table III.—Small-pox mortality in England and Wales at various groups of ages in each of the 32 years, 1847-78.
F.—Table IV. Cases and deaths from small-pox amongst the British troops serving in the United Kingdom for 18 years (1859-76).
G.—Table V.—Cases and deaths from small-pox in the British Navy employed on the home force for 20 years (1859-78).

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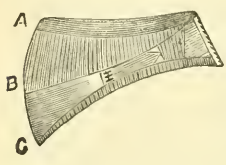

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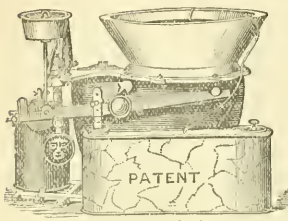

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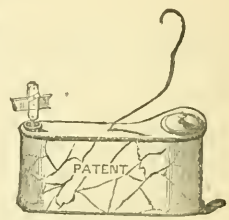

From 'THE BRITISH MEDICAL JOURNAL', April 2nd, 1881.

ANTISEPTIC APPARATUS.

One of the sanitary precautions most urgently needed at the present day is a means of preventing sewer-gas from entering houses. In the face of the continual sanitary improvements, diarrhœa, infantile and adult, typhoid poisoning, pseudo-diphtheric throat affections, etc., are still extensively fatal, and often most markedly so, in the houses of the rich as well as of the poor. It has been noticed in some well-sewered towns that since the introduction of sewers such diseases appear to be on the increase; and it is especially to be noted that they haunt localities which are high and dry, and apparently removed from sources of infection of the soil, the air, or of the water. Some crucial examples have been observed in the best houses in Edinburgh, and in the best districts of London, as well as in regard to provincial towns. It is impossible not to attribute this prevailing plague of sewer gas in houses to the introduction of the water-closet system in connection with arterial drainage by sewers. Remedies, such as the relaying of sewers, a thorough system of ventilation of the soil-pipes, and the introduction of improved forms of water-closet, and well devised traps, are indicated as radical; and wherever these can be applied they ought to be. On the other hand, it is often found that such remedies are so costly and difficult of application, involving such an outlay upon leasehold premises, that it is practically found very difficult to induce householders to adopt them, even when serious outbreaks of illness or chronic suffering from throat affections, headaches, and other indications of sewer gas poisoning have attracted attention to this frequent source of disease. Again, where well-trapped and well-placed water-closets have been introduced, it is certain that, with our present system of drainage, what are intended to be sewers of passage are (as is well known to be the case in a majority of London districts) rather sewers of deposit, and sources of putrefaction and of exhalation of sewer-gas. Even the best appliances will with difficulty prevent sewer-gas from forcing the traps and passing up in gushes into the house whenever the closet is open, and water passes down the pipe, displacing the gas. Hence practical men have long felt it to be a great desideratum that the water left in the water-closet pan should, as far as possible, be permanently charged with disinfecting antiseptic fluid which should constitute the water-closet itself, and an always acting antiseptic water-trap capable of neutralising whatever sewer-gas passes from the soil-pipe. This is an additional precaution which is of great value where all the other arrangements are of the best kind, and it is really indispensable, where they are less effective, and where they cannot be depended upon (as is almost universally the case) for being in prime working order. Such an apparatus was some time since brought into public public use by a Mr. Baker, and brought prominently before the attention of the public. It was extensively used both in the public service and in private asylums, and is still effectively used in many places. It was, however, found to be somewhat difficult to fit on account of its shape, and of some complexity in valves and rods, and of other technical difficulties. These difficulties have been completely overcome by a new and simple apparatus of the sort, which is now introduced under the name of 'the Antiseptic Apparatus', and which has been in use for many months in the houses of various persons who have given it a thorough and searching trial. After such thorough trial we can speak of it with great favour. It is a copper cylinder, easily and cheaply attached to any closet-pan within the woodwork, by an ordinary plumber, without deranging the existing arrangements, and it is charged with a strong solution of permanganate of potash. Each time the plug descends after it has been raised, it discharges into the water contained within the closet-pan a charge of the solution. This remains mixed with the water, and destroys all organic contaminations, neutralises sewer-gas, and has the advantage of acting as a continuous and valuable antiseptic barrier to the entrance of such gas. It does not require charging with the fluid more than about once a year in a closet which is extensively used, the cylinder containing one thousand charges of fluid. Quietly and unobtrusively this useful improvement has been brought under the notice of prominent sanitarians and practical men, and it is making its own way. It is, in our view, one of the most valuable, although simple, inventions of the day, and is likely, we believe, to come into very general and extensive use. It is always easy to renew the charge, and its practical operation is so simple that it appears to remain in working order for years without effort.

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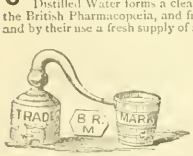

	per lb		per lb		per lb
Aqua Anethi, Concent.	4/0	Aqua Cassiæ Concent.	4/0	Aqua Menth Ang. Concent. ..	6/0
,, Anisi ,, ...	4/0	,, Flor. Aurant ,, ...	8/6	,, Virid. ,, ..	4/0
,, Camphoræ ,, ...	4/0	,, Flor. Sambuci ,, ...	8/6	,, Pimentæ ,, ..	4/0
,, Carui ,, ...	4/0	,, Fœniculi ,, ...	4/0	,, Rosæ ,, ..	8/6
,, Cinnam. Ver. ,, ...	0/0	,, Menth Pip. ,, ...	4/0	,, Rosæ Virgin ,, ..	10/6

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